PATENT

Attorney Docket :
033700WN003

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	)	
	)	
D. Scott WILBUR, *et al.*	)	
	)	
U.S. Serial No.: 09/519,998	)	Examiner: L. Wells
	)	
Filed: March 6, 2000	)	Group Art Unit: 1617

Title: TRIFUNCTIONAL REAGENT FOR CONJUGATION TO A BIOMOLECULE

DECLARATION UNDER 37 C.F.R. §1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Declaration of Dr. D. Scott Wilbur

I, Scott Wilbur, declare as follows:

1. I am a Professor of Radiation Oncology at the University of Washington, Radiation Oncology Box 356043, 2121 N. 35th, Room 211, Seattle, Washington, 98195. I am a person of at least ordinary skill in the technical discipline of the present invention. Attached hereto is a copy of my curriculum vitae.

2. I have read U.S. Patent Application No. 09/519,998 entitled "TRIFUNCTIONAL REAGENT FOR CONJUGATION TO A BIOMOLECULE," including the currently

pending claims in that application, claims 1-3, 6-9, 11-22, and 24-39. Additionally, I have read the June 3, 2004, Office Action issued by the United States Patent and Trademark Office relating to this application.

3. I understand that the U.S. Patent and Trademark Office Examiner has rejected claims 1-3, 6-9, 11-22, and 24, 25, and 31-39 as follows:

Claims 1-3, 6-9, 11-22, 24, 25, 31, 21, and 34-39 are rejected under 35 U.S.C. § 103(a) as obvious based on Wilbur et al. (WO 97/29114, published August 14, 1997) in view of Wilbur et al. (*Bioconjugate Chem. 1997*) or Rosenbrough (*J. Pharm. And Exp. Ther. 1993*).

Claim 33 is rejected under 35 U.S.C. § 103(a) as obvious based on Wilbur et al. (WO 97/29114) in view of Wilbur et al. (*Bioconjugate Chem. 1997*) or Rosenbrough in view of Ganosh (U.S. Pat. No. 5,286,850).

I have fully reviewed and understand the cited documents listed above.

4. I understand the Examiner has relied on my international published application Wilbur (WO 97/29114) as the main reference and has essentially interpreted it as teaching all of the features of the claimed reagent except for the incorporation of alpha carboxylate or N-methyl into linker 1. It is also my understanding that the Examiner has interpreted my earlier publication Wilbur (*Bioconjugate Chem. 1997*) as teaching the use of N-methyl and Rosenbrough as teaching the use of alpha carboxylate. Moreover, I understand that the Examiner is of the opinion that by combining the teachings of the above cited documents, the claims are rendered obvious. From a review of the Office Action, it is considered that the Examiner bases this conclusion on the assertion that Wilbur (*Bioconjugate Chem. 1997*)

and Rosenbrough respectively teach that the N-methyl and the alpha carboxylate stabilize biotinimide bonds against enzymatic cleavage.

5. It is my opinion that the paper by Rosebrough (*J. Pharm. And Exp. Ther.* 1993) and my paper (*Bioconjugate Chem.* 1997) fail to adequately teach or suggest the claimed invention. Further, it is unreasonable to think that a person with "ordinary skill in the art" would be taught that an alpha-carboxylate blocks biotinidase cleave of biotinamide bonds by the Rosebrough paper when it did not teach me, an expert in this area that knows of the need for biotinidase blockade.

6. While the data obtained in the Rosebrough studies were, once my application has been read, suggestive that the carboxylate in the cysteine linker may play a role in blocking biotinidase cleavage, this was not proven in the study. The study showed that a biotin-cysteine-deferoxamine conjugate had 87% stability towards biotinidase cleavage, and that a biotin-desaminolysyl-deferoxamine conjugate without a linker had 45% stability. Based on this data one cannot say with certainty that the alpha-carboxylate was responsible for the higher biotinidase stability. The reason is that the results did not answer the question as to whether the biotinidase stability was due to the cysteine linker or came about by having a combination of the cysteine linker and the desferoxamine. Moreover, one could not predict success from the data. The stability of the biotin-desferoxamine adduct itself suggests that there may be something about the desferoxamine that hinders biotinidase cleavage of the biotinamide bond.

7. I certainly was aware of and read the Rosebrough paper, yet found it necessary to conduct further studies to determine if functional groups alpha to the biotinamide would

block cleavage by biotinidase. Those studies which were subsequently reported by me in 2001 (*Bioconjugate Chem.* 12, 6160623, 2001) demonstrated that a number of functional groups alpha to the biotinamide bond will block biotinidase. My subsequent studies on biotinidase would not have been conducted if I had already been taught that an alpha-carboxylate by itself would block biotinidase activity. Therefore, one of skill in the art could not have assumed that the increased stability was due to the insertion of an alpha carboxylate.

8. Even if others skilled in the arts had made the assumption (but had not been taught) that an alpha-carboxylate was responsible for blocking biotinidase cleavage of biotinamide bonds, and had been taught that an N-methyl blocked biotinidase cleavage from my paper, the combination of this knowledge would not adequately teach or suggest the claimed invention. The reason for this statement is that there are two very important and interactive factors in the biotin derivatives for application to a device to remove toxic materials from the blood, and this information is not taught from the literature. One of the factors is the requirement for very high biotinidase stability. The second factor is that biotin derivatives used must retain a very high binding affinity. The stability toward biotinidase cleavage is critical, but it is also essential in the claimed invention that the high binding affinity of the biotin with avidin or streptavidin be retained. For the purpose of using the products of the present invention, the presence of endogenous biotin in serum makes it essential that a high binding affinity be retained so that the biotin conjugate is not displaced from the column by endogenous biotin. Information on how biotin binding with avidin and streptavidin was affected for various modifications of biotin conjugates was not taught from the literature. Our later studies established a method for determining the relative binding of biotin conjugates (reported in *Bioconjugate Chemistry* 11, 584-598, 2000) and a large number of

biotin derivatives were evaluated to understand how the various modifications affected binding (reported in *Bioconjugate Chemistry* 11, 569-583, 2000). The claimed invention includes these two very important functional aspects.

9. Accordingly, it is my opinion that none of the cited documents, when taken alone or combined, teach or fairly suggest the claimed invention. Moreover, the teachings of the cited documents fail to teach or fairly suggest that in using the products of the invention, a specific combination of molecular functional groups are required to attain efficient trapping of toxic materials and to retain those materials during the process of blood cleansing. In fact, it should be noted that the biotin compound in Wilbur (WO 97/29114) was designed for another application, and without the teaching of the specific requirements for biotinidase blockage and retention of high binding affinity, teaches away from the claimed invention.

10. I declare, under penalty of the perjury laws of the United States, that all statements made herein of my own knowledge are true and that all statements made based on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Respectfully submitted,

By : D. Scott Wilbur

Date Signed : 8/25/04

CURRICULUM VITAE

of

D. SCOTT WILBUR

Address:

Work

University of Washington
Dept. of Radiation Oncology, 358750
2121 N. 35th Street
Seattle, WA 98103-9103
(206)-685-3085 (office)
(206)-685-8224 (laboratory)
(206)-685-9630 (Fax)
E-mail: dswilbur@u.washington.edu

Home

6015 137th Pl. S.W.
Edmonds, WA 98026
(425)-743-7739
wilburds@comcast.net

Personal Data:

Born in Bath, New York - March 18, 1950
Married, one child

Education:

Chemistry Major - Eastern Oregon State College, LaGrande, Oregon;
January 1969 to June 1971

B.S. in Chemistry - (1974) Portland State University, Portland, Oregon;
September 1971 to December 1973

Post-Baccalaureate studies in Chemistry - Portland State Univ.;
January 1974 to June 1974

Ph. D. in Chemistry - (1978) University of California, Irvine, Calif.;
September 1974 to September 1978.
Thesis Advisor - Professor Harold W. Moore.
Thesis; Part I. An Investigation of the Mechanism of Ketene Dimerizations.
Part II. Synthesis of Azepindiones.

Post-doctoral studies in Chemistry - University of California, Irvine, California
September 1978 to December 1978

Professional Experience:

Professor, 7/02 - present
Director, Radiochemistry Division
Associate Professor, 3/90 - 6/02
Department of Radiation Oncology, 356043
University of Washington Medical Center
Seattle, WA 98195

Professional Experience (cont'd):

Director, Radiopharmaceutical Chemistry, 9/86 to 3/90
Head, Radiopharmaceutical Chemistry, 7/86 to 9/86
Head, Radiochemistry, 9/85 to 7/86
Head, Organic Chemistry, 9/84 to 9/85
Senior Scientist, 9/84 to 2/90
NeoRx Corporation
410 West Harrison St.
Seattle, WA 98119

Affiliate Associate Professor 1985 to 1990
Department of Radiology
University of Washington School of Medicine
University of Washington
Seattle, Washington 98195

Staff Research Chemist, November 1978 to August 1984
Medical Radioisotope Research (INC-3)
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Adjunct Professor, Chemistry, August 1981 to May 1982
University of New Mexico, Los Alamos Branch
1333 40th Street
Los Alamos, New Mexico 87544

Research Assistant, June 1975 to June 1978
Teaching Assistant, September 1974 to June 1975
Department of Chemistry
University of California, Irvine
Irvine, California 92717

Research Technician, December 1973 to September 1974
Department of Chemistry
Oregon Graduate Center
Beaverton, Oregon

Professional Membership:

American Chemical Society, Organic Chemistry Section, Medicinal Chemistry Section
Society of Nuclear Medicine, Radiopharmaceutical Science Council
American Association for Cancer Research
Society of Radiopharmaceutical Chemistry and Biology

Reviewer of Manuscripts for: *Journal of Nuclear Medicine, Bioconjugate Chemistry, Journal of Organic Chemistry, Journal of Medicinal Chemistry, Journal of Inorganic Chemistry, Applied Radiation and Isotopes, Nuclear Medicine and Biology, Cancer Research, Chemical Reviews, J. Labelled Compounds and Radiopharmaceuticals, Lancet, Mayo Clinic Proceedings, Carbohydrate Research*

Professional Activities:

Research Peer Review Committee- American Heart Association, Washington Affiliate, 1988, 1989

American Chemical Society
Editorial Advisory Board - *Bioconjugate Chemistry*, American Chemical Society, 1990- present
Reviewer for ACS - Petroleum Research Fund - March 2002

National Institutes of Health
Reviewer for NIH - Radiation Study Section - Outside Reviewer - Feb. 1991; Nov. 1992; Feb. 1993; Feb. 1994, Nov. 2000
Reviewer for NIH - Diagnostic Radiology Study Section - Outside Reviewer - May 1998
Reviewer for NIH - Experimental Therapeutics-2, Study Section April 1993 - Special Emphasis Panel.
Reviewer for NIH - Radiation Study Section - Special Emphasis Panel Member July 2001, January 2002
Reviewer for NIH - SBIR - Phase II - Special Emphasis Panel Member July 1996
Reviewer for NIH - NCI Site visit team for P01 - Univ. of Tennessee February 2001
Reviewer for NIH - NCI PO1 review - Rockville, MD June 2004

Department of Energy
Reviewer for DOE - Feb. 1992 - Site visit team - Review of programs at Brookhaven National Laboratory
- April 1992 - Review of Nuclear Medicine Research Los Angeles, CA
- October 1999 - Review of BNCT / Radiopharmaceutical Programs Washington, D.C.
Reviewer for DOE - Reviewer of Grant Applications; 1990, 1991, 1992, 1994, 1995, 1996, 1998, 1999, 2000, 2001, 2002 SBIR/STTR Program - May 1994,1996, 1998, 1999, 2000, 2001

Society of Nuclear Medicine:
Scientific Program Committee: Subchairman - Radiopharmaceutical Chemistry 1982, 1985
Reviewer of Abstracts for Society of Nuclear Medicine Annual Meeting: 1982, 1984, 1985, 1986, 1987, 1989, 1991, 1995, 2001, 2002, 2003, 2004
Secretary-Treasurer for Radiopharmaceutical Science Council - 1990/1991
President-Elect of Radiopharmaceutical Science Council of the Society of Nuclear Medicine - June 2000-June 2002
President of Radiopharmaceutical Science Council of the Society of Nuclear Medicine - June 2002-June 2004
Past-President of Radiopharmaceutical Sciences Council of the Society of Nuclear Medicine - June 2004-2005
Member of SNM House of Delegates; June 2002 -
Member of Committee on Councils; June 2002 -
Member of Task Group on SNM Website; June 2001 - 2003
Member of Task force on a National Radionuclide Production Facility; May 2003 -
Member of Committee on Radiopharmaceuticals, June 2003-

Professional Activities (cont'd):

Symposia Organization

Organizing Committee member for Third International Symposium on Radiohalogens held Sept. 20-23, 1992, Banff, Alberta, Canada

Scientific Program Committee member for Ninth International Symposium of Radiopharmacology held in Ann Arbor, Michigan on June 7-10, 1995; Chairman for Session on Boron Neutron Capture Therapy

Organizing Committee member for 11th International Symposium on Radiopharmaceutical Chemistry held in Vancouver, BC August 14-18, 1995; Reviewer of Abstracts for Meeting; Moderator of Session on Radiolabeling Antibodies, Peptides and Proteins

Chairman and Organizer of Session on "Isotopes in Macromolecules: Protein, Nucleic Acid, and Monoclonal Antibody Research" in the 6th International Symposium on the Synthesis and Applications of Isotopes and Labeled Compounds held Sept. 1997, Philadelphia, PA.

Chairman and Organizer of Session III: "Labeling with Alpha-Emitters and Carrier Optimization" in the Second Bi-annual Workshop on Alpha-Emitters in Medical Therapy held in Toronto, Canada, June 4-5, 1998.

Organizing Committee member for Fourth International Symposium on Radiohalogens held Sept. 9-14, 2000, Whistler, British Columbia, Canada

Co-Organizer of Symposium: Development of High LET Therapeutic Radiopharmaceuticals" held at the American Chemical Society meeting in March 2003.

Organizing Committee member for Fifth International Symposium on Radiohalogens to be held Sept. 2004, Whistler, British Columbia, Canada

University of Washington:

Standing Committee for Cancer Institutional Grants in the UW School of Medicine 2000, 2001

Inventor on Patents Issued:

1. D.S. Wilbur and S.W. Hadley: Vinyl Substituted Radiohalogen Conjugates for Protein Labeling. Patent Number 4,870,188; Issued Sept. 26, 1989.
2. D.S. Wilbur and S.W. Hadley: Vinyl Substituted Radiohalogen and Methods of Use Conjugates. Patent Number 4,876,081; Issued Oct. 24, 1989.
3. J.M. Reno, B.J. Bottino, and D.S. Wilbur: Radionuclide Antibody Coupling. Patent Number 4,877,868; Issued Oct. 31, 1989.
4. D.S. Wilbur, A.R. Fritzberg, and D.S. Jones: Radiohalogenated Proteins. Patent Number 4,885,153; Issued Dec. 5, 1989.
5. A.R. Fritzberg, S. Kasina, A. Srinivasan, and D.S. Wilbur: Metal Radionuclide Labeled Proteins for Diagnosis and Therapy. Patent Number 4,897,255; Issued Jan. 30, 1990.
6. A.R. Fritzberg, S. Kasina, A. Srinivasan, D.S. Wilbur: Metal Radionuclide Labeled Proteins for Diagnosis and Therapy. Patent Number 5,037,630; Issued Aug. 6, 1991.
7. D.S. Wilbur and A.R. Fritzberg: Radiohalogenated small molecules for protein labeling. Patent Number 5,045,303; Issued Sept. 3, 1991.
8. D.S. Wilbur: Modified Cellular Substrates Used As Linkers For Increased Cell Retention of Diagnostic and Therapeutic Agents. Patent Number 5,057,301; Issued Oct. 15, 1991.
9. A.R. Fritzberg, D.S. Wilbur, A. Srinivasan, and D. W. Wester: Minimal derivatization of proteins. Patent Number 5,059,541; Issued Oct. 22, 1991.
10. D.S. Wilbur and S.W. Hadley: Process for Isolation and Radiolabeling of Pharmaceuticals with Isotopes of Astatine. Patent Number 5,102,651, Issued April 7, 1992.

11. A.R. Fritzberg, S. Kasina, A. Srinivasan, and D.S. Wilbur: Method of Producing Metal Radionuclide Labeled Proteins for Diagnosis and Therapy. Patent Number 5,120,526, Issued June 9, 1992.
12. A.R. Fritzberg, S. Kasina, a. Srinivasan, and D.S. Wilbur: Metal Radionuclide Labeled Proteins for Diagnosis and Therapy. Patent Number 5,175,343, Issued December 29, 1992.
13. D.S. Wilbur and S.W. Hadley: Vinyl substituted radiohalogen conjugates for protein labeling. Patent Number 5,200,169, Issued April 6, 1993.
14. D.S. Wilbur and A.R. Fritzberg: Radiohalogenated small molecules for protein labeling. Patent Number 5,213,787, Issued May 25, 1993.
15. A.R. Fritzberg, S. Kasina, A. Srinivasan, and D.S. Wilbur: Metal Radionuclide labeled proteins for diagnosis and therapy. Patent Number 5,242,679; Issued Sept. 7, 1993.
16. D.S. Wilbur: Iodinated Borane Cage Molecules as X-Ray Contrast Media. Patent Number 5,489,673; Issued February 6, 1996.
17. D.S. Wilbur and A.R. Fritzberg: Radiohalogenated small molecules for protein labeling. Patent Number 5,609,848; Issued March 11, 1997.
18. D.S. Wilbur: Iodinated Borane Cage Molecules as X-Ray Contrast Media. Patent Number 5,679,322; Issued October 21, 1997.
19. D. S. Wilbur, P.M. Pathare, and A.C. Morgan Jr.: Biotinylated Cobalamins. Patent Number 5,739,287; Issued April 14, 1998.
20. A.C. Morgan, D.S. Wilbur, and P.M. Pathare: Vitamin B12 Receptor Modulating Agents and Methods Related Thereto. April 24, 1997, WO97/14711, US Patent Number 5,840,712; issued November 24, 1998.
21. A.C. Morgan and D.S. Wilbur: Receptor Modulating Agents, US Patent Number 5,840,880; issued November 24, 1998.
22. AC. Morgan and D.S. Wilbur: Methods of receptor modulation and uses thereof. US Patent Number 5,869,465, issued February 9, 1999.
23. A.C. Morgan, D.S. Wilbur, and P.M. Pathare: Water soluble vitamin B_{12} receptor modulating agents and methods related thereto. US Patent Number 6,083,926, issued July 4, 2000.
24. D.S. Wilbur and P.M. Pathare: Discrete-Length Polyethylene Glycols. US Patent number 6294697, issued September 25, 2001.
25. D.S. Wilbur and P.M. Pathare: Discrete-Length Polyethylene Glycols (Continuation). US Patent number 6,492,560, issued December 10, 2002

Inventor on Patents Pending and Published as PCT:

26. D.S. Wilbur, P.M. Pathare, S.A. Weerawarna, and D.K. Hamlin: Biotin-Containing Compounds, Biotinylation Reagents and Methods. August 14, 1997, WO 97/29114.
27. D.S. Wilbur, P.M. Pathare, and D.K. Hamlin: Water-Soluble Multi-Biotin-Containing Compounds. US Appl. 09/324,267.
28. D.S. Wilbur, P.M. Pathare, and D.K. Hamlin: Water-Soluble Multi-Biotin-Containing Compounds (Continuation-in-part). US Appl. 10/261.060.
29. D.S. Wilbur and B.E.B. Sandberg: Reagent for conjugation to a biomolecule. PCT/SE98/01345 and PCT/SE99/01241.
30. D.S. Wilbur and B.E.B. Sandberg: Trifunctional reagent for conjugation to a biomolecule. US Application September 20, 2001, 20010023288.
31. B.E.B Sandberg, D.S. Wilbur, and R. Nilsson: Biotin Derivatives. June 15, 2001, US Appl. 09/881.213.

Co-Inventor on additional pending patent applications.

Funding from Contracts and Grants:

Principal Investigator on Small Business Innovative Research Contract entitled "Radioiodinated Conjugates for Therapy and Diagnosis" Phase I (N43-CM-57759) - October 1985 to April 1986 Phase II (N43-CM-67759)- October 1986 to Sept. 1988

Principal Investigator on Small Business Innovative Research Contract entitled "Astatine-211 Labeled Antibodies for Therapy" Phase I (N43-CM-67939) - October 1986 to April 1987

Principal Investigator on Biological Research Support Grant (BRSG - from NIH) entitled: "Modification of Monoclonal Antibodies for Site-Specific Attachment of Therapeutic Agents." March 1991 to March 1992

Principal Investigator on research contract with Merck, Sharp & Dohme Research Laboratories entitled "Synthesis and Radioiodination of Phenylalanine Derivatives" December 1991 to November 1992

Principal Investigator on research contract with Mallinckrodt Medical, Inc. entitled "Development of Highly Iodinated Molecules as X-Ray Contrast Agents" - April 1992 to December 1994.

Principal Investigator on research contract with NeoRx Corporation entitled "Astatine-211 labeled Monoclonal Antibodies" December 1992 to December 1993.

Principal Investigator on research contract with Receptagen, Inc. entitled "Modification of Vitamin B_{12} and Assessment of Biological Activity" - May 1993 to September 1998.

Principal Investigator on research contract with Receptagen, Inc. entitled "Structural Modification of a Coenzyme for Application to Medicine" - October 1993 to September 1996.

Principal Investigator on DOE Funded Research entitled "Dimeric scFv antibodies and Their Streptavidin/Biotin Conjugates in Cancer Imaging and Therapy" - May 1995 to February 1998.

Principal Investigator on research contract with Bracco s.p.a., Milan, Italy, entitled "Preparation of Highly Iodinated Boranes" - March to May, 1996.

Principal Investigator on research contract with Battelle Pacific Northwest National Laboratory, entitled "Development of Linker Chemistry for Radium Chelates" - May-Sept. 1997.

Principal Investigator (Co-Principal with Dr. Rainer Storb, FHCRC) on research grant from The Rich Foundation, Luzern Switzerland entitled "Radioimmunotherapy with Alpha-Emitting Radionuclides as a Novel Conditioning Program for Marrow Transplantation" - February 1998 - January 2001.

Co-Investigator (Principal Investigator is Dr. Oliver Press) on NIH supported grant entitled "Pretargeting of Radioimmunotherapy of CD20+ Lymphomas" - January 1998 thru June 2002.

Principal Investigator on DOE Funded Research entitled "Development of Biotin/Streptavidin Reagents for Antibody Pretargeting of Cancer - March 1998 to February 2001.

Principal Investigator on DOD Funded Research entitled "Preclinical Evaluation of a Targeted Alpha-Emitting Radionuclide in Radiotherapy of Breast Cancer" - April 1998 to March 2000.

Principal Investigator on Contract from Moss, Inc. entitled "Synthesis of a Novel Biotin Compound". January 1998 to March 1998.

Principal Investigator on DOD Funded Research entitled "Pretargeting of Astatine-211 for Therapy of Metastatic Prostate Cancer". July 1998 - August 2001.

Principal Investigator on Contract from Mitra Medical Technologies entitled "Development of Reagents for a Tag-Kit". November 1998 - July 2004.

Principal Investigator on DOE Funded Research entitled "Evaluation of Reagents for Rapid and Stable Labeling of Biomolecules with Astatine-211". Nov. 2000 - October 2003.

Principal Investigator on DOE Funded Research entitled "Development of Reagents for Application of At-211 and Bi-213 to Targeted Radiotherapy of Cancer". Mar. 2001 - Feb. 2005.

Principal Investigator for subcontract for NIH grant (FHCRC), Principal Investigator Dr. Oliver Press, "Radioimmunotherapy of B-Cell Lymphomas using Pretargeting Approaches" - July 2002 thru June 2006.

Principal Investigator on subcontract for NIH grant (FHCRC) Principal Investigator Dr. Brenda Sandmaier, Nonmyeloablative Grafts: Haploidentical Littermate Dogs", July 2002 thru June 2004.

Funding from Contracts and Grants (Cont'd)

Principal Investigator on DOD funded research entitled "In Vitro Assessment of a Peptide Nucleic Acid (PNA)-Peptide Conjugate Labeled with an Auger-Emitting Radionuclide for Prostate Cell Killing". Feb 2004-Feb 2005.

Principal Investigator on DOE funded support for a conference; "Fifth International Symposium on Radiohalogens, September 11-15, 2005

Publications in Peer Reviewed Journals:

1. Wilbur D.S. and Moore H.W. (1978) Cyanoketenes. Mechanism of *tert*-Butylcyanoketene Cycloaddition to Methyl- and Ketoketenes. *J. Amer. Chem. Soc. 100*, 6523-6525.
2. Moore H.W. and Wilbur D.S. (1980) Cyanoketenes. Mechanism of *tert*-Butylcyanoketene Cycloaddition to Aldo- and Ketoketenes. *J. Org. Chem. 45*, 4482-4491.
3. Wilbur D.S., Bentley G.E. and O'Brien H.A., Jr. (1981) A Rapid Synthesis of A-Ring Bromine-77-Labeled Estrogens with High Specific Activity. *J. Label. Compds. Radiopharm. 18*, 1693-1701.
4. Wilbur D.S. and Anderson K.W. (1982) Bromine Chloride from N-Chlorosuccinimide Oxidation of Bromide Ion. Electrophilic Addition Reactions in Protic and Aprotic Solvents. *J. Org. Chem. 47*, 358-359.
5. Wilbur D.S. and O'Brien H.A., Jr. (1982) A-Ring Bromination of Estradiol and 17α-Ethynylestradiol with N-Chlorosuccinimide and Bromide Ion. *J. Org. Chem. 47*, 359-362.
6. Wilbur D.S., Anderson K.W., Stone W.E. and O'Brien H.A., Jr. (1982) Radiohalogenation of Non-activated Aromatic Compounds Via Aryltrimethylsilyl Intermediates. *J. Labelled Compds. Radiopharm. 19*, 1171-1187.
7. Gibson R.E., Eckelman W.C., Francis B., O'Brien H.A., Mazaitis J.K., Wilbur D.S., and Reba R.C. (1982) [Br-77]-17α-Bromoestradiol *In Vivo* and *In Vitro* Characterization of an Estrogen Receptor Radiotracer. *Int. J. Nucl. Med. Biol. 9*, 245-250.
8. Wilbur D.S., Stone W.E. and Anderson K.W. (1983) Regiospecific Incorporation of Bromine and Iodine into Phenols Using Trimethylsilylphenol Derivatives. *J. Org. Chem. 48*, 1542-1544.
9. Hylarides M.D. and Wilbur D.S. (1983) B-Ring Aromatization of Estrogen Derivatives. *Steroids 41*, 657-662.
10. Wilbur D.S. and Svitra Z.V. (1983) Organopentafluorosilicates. Reagents for Rapid and Efficient Incorporation of No-Carrier-Added Radiobromine and Radioiodine. *J. Labelled Compds. Radiopharm. 20*, 619-626.
11. Wilbur D.S. (1984) Structural Determination of Some Chloroazepin-2,5-diones Using a Lanthanide Shift Reagent. *J. Heterocycl. Chem. 21*, 801-807.
12. Cromer D.T., Ryan R.R. and Wilbur D.S. (1984) Structure of 1-H-Azepine-2-One-5-Methoxime, $C_7H_8N_2O_2$. *Acta Cryst. C40*, 301-303.
13. Wilbur D.S. and Svitra Z.V. (1984) Electrophilic Radiobrominations of Hippuric Acid: An Example of the Utility of Aryltrimethylsilane Intermediates. *J. Label. Compds. Radiopharm. 21*, 415-428.
14. Wilbur D.S., Garcia S.R., Adam M.J. and Ruth T.J. (1984) An Evaluation of the Introduction of Stable Nuclides of Bromine into High Specific Activity Radiobrominations. *J. Labelled Compds. Radiopharm. 21*, 767-779.
15. Hylarides M.D., Leon A.A., Mettler F.A., and Wilbur D.S. (1984) Synthesis of 1-Bromoestradiol. *J. Org. Chem. 49*, 2744-2745.
16. Hylarides M.D., Buksa P.L., Mettler F.A. and Wilbur D.S. (1985) Radiobromination of the 1-position of Estradiol Using No-Carrier-Added Bromine-77. *J. Labelled Compds. Radiopharm. 22*, 437-441.
17. Hylarides M.D., Leon A.A., Mettler F.A. and Wilbur D.S. (1985) Radiolabeling of B- and C-Ring of Estradiol Using No-Carrier-Added Bromine-77. *J. Labelled Compds. Radiopharm. 22*, 443-450.

18. Speranza M., Shiue C.Y., Wolf A.P., Wilbur D.S. and Angelini G. (1984) Regiospecific Radiofluorination of Arylpentafluorosilicates as a General Route to F-18-Labelled Arylfluorides. *J. Chem. Soc. Chem. Commun.* 1448-1449.
19. Speranza M., Shuie C.Y., Wolf A.P., Wilbur D.S. and Angelini G. (1985) Electrophilic Radiofluorination of Aryltrimethylsilanes as a General Route to F-18 Labelled Arylfluorides. *J. Fluorine Chem.* 30, 97-107.
20. Grunbaum Z., Freauff S.J., Krohn K.A., Wilbur D.S., Magee S. and Rasey J.S. (1987) Synthesis and Characterization of Congeners of Misonidazole for Imaging Hypoxia. *J. Nucl. Med. 28*, 68-75.
21. Fritzberg A.R., Abrams P.G., Beaumier P.L., Kasina S., Morgan A.C., Rao T.N., Reno J.M., Sanderson J.A., Srinivasan A., Wilbur D.S. and Vanderheyden J.L. (1988) Specific and Stable Labeling of Antibodies with Technetium-99m Using a Diamide Dimercaptide (N_2S_2) Chelating Agent. *Proc. Natl. Acad. Sci., USA, 85*, 4025-4029.
22. Eary J.F., Schroff R.W., Abrams P.G., Fritzberg A.R., Morgan A.C., Kasina S., Reno J.M., Srinivasan A., Woodhouse C.S., Wilbur D.S., Natale R.B., Collins C., Stehlin J.S., Mitchell M. and Nelp W.B. (1989) Successful Imaging of Malignant Melanoma with Technetium-99m Labeled Monoclonal Antibodies. *J. Nucl. Med. 30*, 25-32.
23. Hanson R.N., El-Wakil, Murphy F. and Wilbur D.S. (1989) Synthesis and Evaluation of ^{82}Br and ^{77}Br Labeled (17,20ε)-21-bromo-19-norprena-1,3,5(10),20-tetraene-3,17-diol. *J. Labelled Compds. Radiopharm. 27*, 615-627.
24. Wilbur D.S., Hylarides M.D. and Fritzberg A.R. (1989) Reactions of Organometallic Compounds with Astatine-211. Application to Protein Labeling. *Radiochemica Acta 47*, 137-142.
25. Wilbur D.S., Hadley S.W., Hylarides M.D., Abrams P.G., Beaumier P.L., Morgan A.C., Reno J. and Fritzberg A.R. (1989) Development of a Stable Radioiodinating Reagent to Label Monoclonal Antibodies For Radiotherapy of Cancer. *J. Nucl. Med. 30*, 216-226.
26. Hylarides M.D., Wilbur D.S., Hadley S.H. and Fritzberg A.R. (1989) Synthesis and Iodination of Methyl 4-Tri-*n*-Butylstannylbenzoate, 4-Carbomethoxyphenyl Mercuric Chloride and 4-Carbomethoxyphenyl Boronic Acid. *J. Organometallic Chem. 367*, 259-265.
27. Badger C.C., Wilbur D.S., Hadley S.W., Fritzberg A.R. and Bernstein I.D. (1990) Biodistribution of *Para*-Iodobenzoyl (PIP) Labeled Antibodies in a Murine Lymphoma Model. *Appl. Radiat. Isot., B, Nucl. Med. Biol. 17*, 381-387.
28. Hadley S.W. and Wilbur D.S. (1990) Evaluation of Iodovinyl Antibody Conjugates: Comparison with a *Para*-Iodobenzoyl Conjugate and Direct Radioiodination. *Bioconjugate Chem. 1*, 154-161.
29. Wilbur D.S. (1990) Potential Use of Alpha Emitting Radionuclides in the Treatment of Cancer. *Antibodies, Immunoconj. Radiopharm. 4*, 85-97.
30. Murray J.L., Mujoo K., Wilmanns C., Mansfield P., Wilbur D.S., and Rosenblum M.G.: (1991) Variables Influencing Tumor Uptake of Antimelanoma Monoclonal Antibodies Radioiodinated Using the *Para*-Iodophenyl (PIP) Technique. *J. Nuc. Med 32*, 279-287.
31. Wilbur D.S. and Hylarides M.D. (1991) Radiolabeling of A Monoclonal Antibody with N-Succinimidyl *Para*-[^{77}Br]Bromobenzoate. *Int. J. Radiat. Appl. Instrum. [A], Nucl. Med. Biol. 18*, 363-365.
32. Wilbur D.S., Hadley S.W., Grant L.M. and Hylarides M.D. (1991) Radioiodinated Iodobenzoyl Conjugates of a Monoclonal Antibody Fab Fragment. *In Vivo* Comparisons with Chloramine-T Labeled Fab. *Bioconjugate Chem. 2*, 111-116.
33. Hadley S.W., Wilbur D.S., Gray M.A. and Atcher R.W. (1991) Astatine-211 Labeling of an Anti-Melanoma Antibody and its' Fab Fragment using N-Succinimidyl *Para*-[^{211}At]Astatobenzoate: Comparisons *In Vivo* with the *Para*-[^{125}I]Iodobenzoyl Conjugate. *Bioconjugate Chem. 2*, 171-179.
34. Hylarides M.D., Wilbur D.S., Reed M.W., Hadley S.W., Schroeder J.R. and Grant L.M. (1991) Preparation and *In Vivo* Evaluation of an [^{125}I]Iodophenethylmaleimide Antibody Conjugate. *Bioconjugate Chem. 2*, 435-440.

35. Wilbur D.S. (1992) Radiohalogenation of Proteins: An Overview of Radionuclides, Labeling Methods and Reagents for Conjugate Labeling. *Bioconjugate Chem. 3*, 433-470.
36. Wilbur D.S., Vessella R.L., Stray J.E., Goffe D.K., Blouke K.A., and Atcher R.W. (1993) Preparation and Evaluation of *Para*-[^{211}At]Astatobenzoyl Labeled Anti-Renal Cell Carcinoma Antibody A6H F(ab')$_2$. *In Vivo* Distribution Comparison with *Para*-[^{125}I]Iodobenzoyl Labeled A6H F(ab')$_2$. *Nucl. Med. Biol. 20*, 917-927.
37. Wilbur D.S., Hamlin D.K., Srivastava R.R., and Burns H.D. (1993) Synthesis and Radioiodination of N-Boc-*p*-(tri-*n*-butylstannyl)-L-phenylalanine Tetrafluorophenyl Ester: Preparation of a Radiolabeled Phenylalanine Derivative for Peptide Synthesis. *Bioconjugate Chem. 4*, 574-580.
38. Laramore G.E., Wootton P., Livesey J.C., Wilbur D.S., Risler R., Phillips M., Jacky J., Bucholz T.A., Griffin T.W., Brossard S. (1994) Boron Neutron Capture Therapy: A Mechanism for Achieving a Concomitant Tumor Boost in Fast Neutron Therapy. *Int. J. Radiat. Oncol. Biol. Phys. 28*, 1135-1142.
39. Wilbur, D.S., Hamlin, D.K., Livesey J.C., Srivastava, R.R., Laramore, G.E. and Griffin, T.W. (1994) Synthesis of *nido*-1,2-Carboranyl Derivatives of 2-Nitroimidazole. *Int. J. Appl. Radiat. Isot. 21*, 601-611.
40. Wilbur D.S., Stray, J.E., Hamlin, D.K., Curtis, D.K. and Vessella, R.L. (1994) Monoclonal Antibody Fab' Fragment Cross-Linking Using Equilibrium Transfer Alkylation Reagents. Strategy for Site-Specific Conjugation of Diagnostic and Therapeutic Agents with F(ab')$_2$ Fragments. *Bioconjugate Chem. 5*, 220-235.
41. Bucholz T.A., Laramore G.E., Wootton P., Livesey J.C., Wilbur D.S., Risler R., Phillips M., Jacky J. and Griffin T.W. (1994) Enhancement of Fast Neutron Beams with Boron Neutron Capture Therapy: A Mechanism for achieving a selective, concomitant tumor boost. *Acta Oncologica 33*, 307-313.
42. Laramore G.E., Risler R., Griffin T.W., Wootton P. and Wilbur D.S. (1996) Fast Neutron radiotherapy and boron neutron capture therapy: application to a human melanoma test system. *Bull. Cancer Radiother. 83*, 191S-197S.
43. Pathare P.M., Wilbur D.S., Heusser S., Quadros E.V., McLoughlin P., and Morgan A.C. (1996) Synthesis of Cobalamin-Biotin Conjugates That Vary in the Position of Cobalamin Coupling. Evaluation of Cobalamin Derivative Binding to Transcobalamin II. *Bioconjugate Chem. 7*, 217-232.
44. Wilbur D.S., Hamlin D.K., Pathare P.M., Heusser S., Vessella R.L., Buhler K.R., Stray J.E., Daniel J., Quadros E.V., McLoughlin P., and Morgan A.C. (1996) Synthesis and *nca*-Radioiodination of Arylstannylcobalamin Conjugates. Evaluation of Aryliodocobalamin Conjugate Binding to Transcobalamin II and Biodistribution in Mice. *Bioconjugate Chem. 7*, 461-474.
45. Wilbur D.S., Hamlin D.K., Vessella R.L., Stray J.E., Buhler K.R., Stayton P., Klumb L., Pathare P.M., and Weerawarna S.A. (1996) Antibody Fragments in Tumor Pretargeting. Evaluation of Biotinylated Fab' Co-localization with Recombinant Streptavidin and Avidin. *Bioconjugate Chem. 7*, 689-702.
46. Srivastava R.R., Hamlin D.K., and Wilbur D.S. (1996) Synthesis of Highly Iodinated Icosahedral Mono- and Dicarbon Carboranes. *J. Org. Chem. 61*, 9041-9044.
47. Pathare P.M., Wilbur D.S., Hamlin D.K., Heusser S., Quadros E.V., McLoughlin P., and Morgan A.C. (1997) Synthesis of Cobalamin Dimers Using Isophthalate Cross-Linking of Corrin Ring Carboxylates and Evaluation of Their Binding to Transcobalamin II. *Bioconjugate Chem. 8*, 161-172.
48. Reed M. W., Panyutin I.G., Hamlin D., Lucas D.D., and Wilbur D.S. (1997) Synthesis of ^{125}I Labeled Oligonucleotides from Tributylstannylbenzamide Conjugates. *Bioconjugate Chem. 8*, 238-243.
49. Wilbur D.S., Hamlin D.K., Pathare P.M., and Weerawarna S.A. (1997) Biotin Reagents For Antibody Pretargeting. Synthesis, Radioiodination and In Vitro Evaluation of Water Soluble, Biotinidase Resistant Biotin Derivatives. *Bioconjugate Chem. 8*, 572-584.

50. McLean G.R., Pathare P.M., Wilbur D.S., Morgan A.C., Schrader J.W., and Ziltener H.J. (1997) Synthetic Derivatives of Cobalamin: An Analysis of the Effects on Leukemic Cell Growth *in vitro*. *Cancer Res. 57*, 4015-4022.
51. Wilbur D.S., Hamlin D.K., Pathare P.M., and Weerawarna S.A. (1997) Biotin Reagents for Antibody Pretargeting. 2. Synthesis and In Vitro Evaluation of Biotin Dimers and Trimers for Cross-Linking of Streptavidin. *Bioconjugate Chem. 8*, 819-832.
52. Wilbur D.S., Stayton P.S., To R., Klumb L.A., Hamlin D.K., Vessella R.L., Buhler K.R., and Stray J.E. (1998) Streptavidin in Antibody Pretargeting. Comparison of a Recombinant Streptavidin with Two Streptavidin Mutant Proteins and Two Commercially Available Streptavidin Proteins. *Bioconjugate Chem. 9*, 100-107.
53. Wilbur D.S., Hamlin D.K., Buhler K.R., Pathare P.M., Vessella R.L., Stayton P.S., and To R. (1998) Streptavidin in Antibody Pretargeting. 2. Evaluation of Methods to Decrease Localization of Streptavidin to Kidney while Retaining its Tumor Binding Capacity. *Bioconjugate Chem. 9*, 322-330.
54. Pathare P.M., Hamlin D.K., Wilbur D.S., Brechbiel M.W., and Bray L.A. (1998) Synthesis and Radiolabeling of a Biotin-CHX-B Chelate for Bi-213. *J. Labelled Compds Radiopharm. 41*, 595-603.
55. Tan P.H., Chu V., Stray J., Hamlin D.K., Pettit D., Wilbur D.S., Vessella R.L., and Stayton P.S. (1998) Engineering the Isoelectric Point of a Renal Cell Carcinoma Targeted Antibody Greatly Enhances scFv Solubility. *ImmunoTechnology 4*, 107-114.
56. Wilbur D.S., Pathare P.M., Hamlin D.K., Buhler K.R., and Vessella R.L. (1998) Biotin reagents for Antibody Pretargeting. 3. Synthesis, Radioiodination and Evaluation of Biotinylated Starburst Dendrimers. *Bioconjugate Chemistry 9*, 813-825.
57. Wilbur D.S., Pathare P.M., Hamlin D.K., Stayton P.S., To R., Klumb L.A., Buhler K.R., and Vessella R.L. (1999) Development of New Biotin / Streptavidin Reagents for Pretargeting. *Biomolecular Eng. 16*, 113-118.
58. Wilbur D.S., Pathare P.M., Hamlin D.K., Rothenberg S.P. and Quadros E.V. (1999) Radioiodination of Cyanocobalamin Conjugates Containing Hydrophilic Linkers: Preparation of a Radioiodinated Cyanocobalamin Monomer and Two Dimers, and Assessment of Their Binding with Transcobalamin II. *Bioconjugate Chemistry 10*, 912-920.
59. Bray L.A., Tingey J.M., DesChane J.R., Egorov O.B., Tenforde T.S., Wilbur D.S., Hamlin D.K., Pathare P.M., and Finn R. (2000) Development of a Unique Bismuth (Bi-213) Automated Generator for Use in Cancer Therapy. *Industrial & Chemical Engineering Research 39*, 3189-3194.
60. Wilbur D.S., Pathare P.M., Hamlin D.K., Frownfelter M.B., Kegley B.B., Leung W.-Y., and Gee K.R. (2000) Evaluation of Biotin-Dye Conjugates for Use in an HPLC Assay to Assess Relative Binding of Biotin Derivatives with Avidin and Streptavidin. *Bioconjugate Chem. 11*, 584-598.
61. Wilbur D.S., Chyan M.-K., Pathare P.M., Hamlin D.K., Frownfelter M.B., and Kegley B.B. (2000) Biotin Reagents for Antibody Pretargeting 4. Selection of Biotin Conjugates for In Vivo Application Based on Their Dissociation Rate from Avidin and Streptavidin. *Bioconjugate Chem. 11, 569-583.*
62. Stayton P.S., Hoffman A.S., Murthy N., Lackey C., Cheung C., Tan P., Klumb L.A., Chilkolti A., Wilbur D.S., and Press O.W. (2000) Molecular engineering of proteins and polymers for targeting and intracellular delivery of therapeutics. *J. Controlled Release 65*, 203-220.
63. Press O.W., Corcoran M., Subbiah K., Hamlin D., Wilbur D.S., Johnson T., Theodore L., Yau E., Mallett R., Meyer D., and Axworthy D. (2001) A Comparative Evaluation of Conventional and Pretargeted Radioimmunotherapy of CD20-expressing Lymphoma Xenografts. *Blood 98*, 2535-2543.
64. Vessella R.L., Wilbur D.S., Buhler K.R., and Lange P.H. (2001) Experimental Models and Methods in Antibody Targeting of Renal Cell Carcinoma. *Meth. Mol. Med. 53*, 217-242..
65. Wilbur D.S., Hamlin D.K., Chyan M.-K., Kegley B.B., and Pathare P.M. (2001) Biotin Reagents for Antibody Pretargeting. 5. Additional Studies of Biotin Conjugate Design to Provide Biotinidase Stability. *Bioconjugate Chem. 12*, 616-623.

66. Wilbur D.S. (2001) Overcoming the Obstacles to Clinical Evaluation of Astatine-211 Radiopharmaceuticals. [Invited Commentary] *J. Nucl. Med. 42*, 1516-1518.
67. Hamblett K.J., Kegley B.B., Hamlin D.K., Chyan M.-K., Hyre D.E., Press O.W., Wilbur D.S., and Stayton P.S. (2002) A Streptavidin-Biotin Binding System that Minimizes Blocking by Endogenous Biotin. *Bioconjugate Chem. 13*, 588-598.
68. Sandmaier B.M., Bethge W.A., Wilbur D.S., Hamlin D.K., Santos E.B., Brechbiel M.W., Fisher D.R., and Storb R. (2002) Use of a ^{213}Bi Labeled Anti-CD45 Radioimmunoconjugate in the Conditioning of Nonmyeloablative Canine Marrow Transplantation. *Blood 100*, 318-326
69. Wilbur D.S., Hamlin D.K., Meyer D.L., Mallett R.W., Quinn J., Vessella R.L., and Press, O.W. (2002) Streptavidin in Antibody Pretargeting. 3. Comparison of Biotin Binding and Tissue Localization of 1,2-Cyclohexanedione and Succinic Anhydride Modified Recombinant Streptavidin. *Bioconjugate Chem. 13*, 611-620.
70. Wilbur D.S., Chyan M.-K., Hamlin D.K., Kegley B.B., Nilsson R., Sandberg B.E.B., and Brechbiel M. (2002) Trifunctional Conjugation Reagents. Reagents that Contain a Biotin and a Radiometal Chelation Moiety for Application to Extracorporeal Affinity-Adsorption of Radiolabeled Antibodies. *Bioconjugate Chem. 13*, 1079-1092.
71. Subbiah K., Hamlin D.K., Pagel J.M., Wilbur D.S., Meyer D.L., Axworthy D.B., Mallett R.W., Theodore L.J., Stayton P.S., and Press O.W. (2003) A Comparison of Immunoscintigraphy, Efficacy, and Toxicity of Conventional and Pretargeted Radioimmuotherapy in CD20-Expressing Human Lymphoma Xenografts. *J. Nucl. Med.* 44,437-445
72. Pagel J.M., Hedin N., Subbiah K., Meyer D., Mallet R., Axworthy D., Theodore L.J., Wilbur D. S., Matthews D.C., and Press O.W. (2003) Comparison of anti-CD20 and anti-CD45 antibodies for conventional and pretargeted radioimmunotherapy of B-cell lymphomas. *Blood 101*, 2340-2348..
73. Bethge W.A., Wilbur D.S., Storb R., Hamlin D.K., Santos E.B., Brechbiel M.W., Fisher D.R., and Sandmaier B.M. (2003) Selective T-cell ablation with bismuth-213 labeled anti-TCR$\alpha\beta$ as Nonmyeloablative conditioning for allogenic canine marrow transplantation. *Blood 101*,5068-5075.
74. Wilbur D.S. (2003) Letter to Editor: Formation of Sulfonamide Bonds Through Reaction of Dyes with Serum Proteins. *J. Nucl. Med. 44*,1540.
75. Bethge W.A., Wilbur D.S., Storb R., Hamlin D.K, Santos E.B., Brechbiel M.W., Fisher D.R., and Sandmaier B.M. (2004) Radioimmunotherapy with Bismuth-213 as Conditioning for Nonmyleloablative Allogeneic Hematopoeitic Cell Transplantation: A Dose De-escalation Study. *Transplantation - in press.*
76. Hamblett K.J., Press O.W., Meyer D.L., Hamlin D.K., Axworthy D., Wilbur D.S., and Stayton P.S. (2003) Role of Binding Affinity in Streptavidin-Based Pretargeted Radioimmunotherapy of Lymphoma. *Bioconjugate Chem. - submitted.*
77. Wilbur D.S., Chyan M.-K., Hamlin D.K., Kegley B.B., Risler R., Buhler K.R., Quinn J., Vessella R.L., Foulon C., Zalutsky M., Wedge T.J., and Hawthorne M.F. (2004) Reagents for Astatination of Biomolecules. Comparison of the In Vivo Stability of Some Radioiodinated and Astatinated Benzamidyl- and *nido*-Carboranyl-Compounds. *Bioconjugate Chem. 15,203-223.*
78. Wilbur D.S., Hamlin D.K., Buhler K.R., Chyan M.-K., Srivastava R.R., and Vessella R.L. (2004) Synthesis, Radioiodination and Biodistribution of Some *nido*- and *closo*-Monocarbon Carborane Derivatives. *Nucl. Med. Biol. 31*, 523-530.
79. Wilbur D.S., Hamlin D.K., Chyan M.-K., Kegley B.B., Quinn J., and Vessella R.L. (2004) Biotin Reagents in Antibody Pretargeting. 6. Synthesis and In Vivo Evaluation of Astatinated and Radioiodinated Aryl- and *nido*-Carboranyl-Biotin Derivatives. *Bioconjugate Chem. 15*, 601-616.
80. Wilbur D.S., Hamlin D.K., Sanderson J., and Lin Y. (2004) Streptavidin in Antibody Pretargeting. 4. Site-Directed Mutation Provides Evidence that Both Arginine and Lysine Residues are Involved in Kidney Localization. *Bioconjugate Chem. - submitted.*
81. Adam M.J. and Wilbur D.S. (2004) Radiohalogens for Imaging and Therapy (Invited tutorial review). *Chem. Soc. Rev. - submitted.*

Published Proceedings and Book Chapters

1. Wilbur D.S. (1978) Ph.D. Thesis: Part I. An investigation of the mechanism of ketene dimerizations. Part II. Synthesis of azepinediones, Univ. of California, Irvine.
2. Wilbur D.S., Anderson K.W., Stone W.E., Svitra Z., Rogers R.S., and O'Brien H.A. Jr. (1982), Regiospecific Incorporation of Radioiodine into Aromatic Rings via Organosilanes. Fourth International Symposium on Radiopharmaceutical Chemistry. KFA Julich, West Germany, August 1982. *J. Labelled Compds. Radiopharm. 19,* 1587-1588.
3. Wilbur D.S. and Svitra Z. (1983) Studies Toward Radiohalogenations of Fatty Acids: Radiopharmaceuticals for Evaluating the Heart. *Los Alamos Natl. Lab. Report* pp 104-106.
4. Wilbur D.S., Stone W.E., Svitra Z. and Rogers R.S. (1985) Radiohalogen Labeling Studies at Los Alamos. Proc. International Symposium on *The Developing Role of Short-Lived Radionuclides in Nuclear Medicine Practice.* Washington, D.C., May 1982. U.S. Department of Energy (DE82008258).
5. Wilbur D.S. (1986) Development of No-Carrier-Added Radiotracers with the Aid of Radio-HPLC. In *Analytical and Chromatographic Techniques in Radiopharmaceutical Chemistry.* Wieland D.M., Tobes M.C., and Mangner T.J., Eds., Springer-Verlag.
6. Wilbur D.S., Jones D.S., and Fritzberg A.R. (1986) Synthesis and Radioiodinations of Some Aryltin Compounds for Radiolabeling of Monoclonal Antibodies. Sixth International Symposium on Radiopharmaceutical Chemistry. Boston, Mass. June 1986. *J. Labelled Compds. Radiopharm. 23,* 1304-1306.
7. Wilbur D.S., Hylarides M.D., Hadley S.W., Schroeder J., and Fritzberg A.R. (1989) A General Approach to Radiohalogenation of Proteins. Radiohalogenation of Organometallic Intermediates Containing Protein Reactive Substituents. Seventh International Symposium on Radiopharmaceutical Chemistry, Groningen, The Netherlands, July 1988. *J. Labelled Compds. Radiopharm. 26,* 316-318.
8. Abrams P., Schroff R., Fritzberg A., Morgan A.C., Wilbur D.S., Srinivasan A., Reno J., Sivam G., Kasina S., Vanderheyden J.L., Beaumier P., Salk D. and Fer M. (1989) Controlled Labeling of Monoclonal Antibodies for Imaging Metastatic Cancer: A Prelude to Therapy. In *Human Tumor Antigens and Specific Tumor Therapy.* Metzer R.S. and Mitchell M.S., Eds., pp 191-197, Alan R. Liss, Inc. New York.
9. Wilbur D.S., Hadley S.W., Hines J.J., and Atcher R.W. (1990) Assessment of Dry Distillation Methods for Improving Protein Labeling Yields with Astatine-211. Eighth International Symposium of Radiopharmaceutical Chemistry, Princeton, New Jersey, June 24-25, *J. Labelled Compds. Radiopharm. 30,* 214-215.
10. Abrams P.G., Fritzberg A.R., Wilbur D.S., Beaumier P.L., Carrasquillo J.A., , Larson S.M., Schroff R.W., Morgan A.C., Eary J.F., and Nelp W.B. (1991) Imaging and Therapy of Metastatic Carcinoma with Radiolabeled Monoclonal Antibodies. In *Principles of Cancer Biotherapy,* R.K. Oldham, Ed., Chapter 16, pp 471-492, Marcel Dekker, Inc., New York.
11. Laramore G.E., Livesey J.C., Wootton P., Wilbur D.S., Jacky J., Risler R. and Vessella, R. (1992) Boron neutron capture therapy: a means of increasing the effectiveness of fast neutron radiotherapy. In *Proceedings of the 9th International Congress of Radiation Research,* Vol. II, W.C. Dewey, M. Edington, R.J.M. Fry, E.J. Hall, and G.F. Whitmore, Eds., pp 617-622, Academic Press, San Diego.
12. Wilbur D.S., Hamlin D.H., Laramore G.E. and Griffin, T.W. (1993) Preparation of *meta*-Carborane Derivatives by Thermal Rearrangement in a Small Scale Laboratory Apparatus. In *Advances in Neutron Capture Therapy* (Soloway A.H., Barth R.F. and Carpenter D.E., Editors), pp 319-323, Plenum Press, New York.
13. Wilbur D.S., Hamlin D.K., Srivastava R.R., Laramore G.E. and Griffin T.W. (1993) Synthesis and Evaluation of Amine Reactive Carboranyl Derivatives for Application to Boron-10 Containing Polymers. In *Advances in Neutron Capture Therapy* (Soloway A.H., Barth R.F. and Carpenter D.E., Editors), pp 333-337, Plenum Press, New York.

14. Wilbur D.S., Hamlin D.K., Livesey J.C., Srivastava R.R., Laramore G.E. and Griffin, T.W. (1993) Preparation of *meta*-Carboranylpropyl-2-nitroimidazole Derivatives for Application to BNCT. In *Advances in Neutron Capture Therapy* (Soloway A.H., Barth R.F. and Carpenter D.E., Editors), pp 309-313, Plenum Press, New York.
15. Livesey J.C., Wiens L.W., Wilbur D.S. and Laramore G.E. (1993) Hypoxia-Selective Cellular Toxicity of Carboranyl Nitroimidazole. In *Advances in Neutron Capture Therapy* (Soloway A.H., Barth R.F. and Carpenter D.E., Editors), pp 315-318, Plenum Press, New York.
16. Wilbur D.S., Hamlin D.K., Srivastava R.R. and Burns H.D. (1994) Synthesis and Radioiodination of a Phenylalanine Derivative for Use in Peptide Synthesis. *J. Labelled Compds. Radiopharm. 35*, 224-225.
17. Wilbur D.S., Hamlin D.K. and Srivastava R.R. (1994) Radioiodinations of *nido*-Carboranes. Potential Hydrophilic Pendant Groups for Radiohalogenation of Biological Molecules. *J. labelled Compds. Radiopharm. 35*, 199-201.
18. Fritzberg A.R. and Wilbur D.S. (1995) Radiolabeling of Antibodies for Targeted Diagnostics. In *Targeted Delivery of Imaging Agents*. (Torchilin V.P, Ed.), Chapt. 6, pp 83 - 101, CRC Press, Boca Raton, FL.
19. Wilbur D.S., Hamlin D.K., Buhler K.R., Srivastava R.R., Stray J.E., Daniel J. and Vessella R.L. (1995) Comparison of *In Vivo* Distributions of Simple Radioiodinated Borane and Carborane Cage Molecules. Proceedings of the Ninth International Symposium on Radiopharmacology, Ann Arbor Michigan, June 7-10. *Quart. Rev. Nucl. Med. 39*, 51-52.
20. Wilbur D.S., Srivastava R.R., Livesey J.C., Cerveney C., and Hamlin D.K. (1995) Highly Iodinated Boranes and Carboranes as X-Ray Contrast Agents. *In Vitro* Evaluations of Blood Compatibility Based on Red Blood Cell Hemolysis and Protein Precipitation. Proceedings of the Ninth International Symposium on Radiopharmacology, Ann Arbor Michigan, June 7-10. *Quart. Rev. Nucl. Med. 39*, 84-86.
21. Hamlin D.K., Wilbur D.S., Stray J.E., Chitnis A., Buhler K.R., Daniel J. and Vessella R.L. (1995) Synthesis and Evaluation of *para*-Iodohippuric Acid Tetrafluorophenyl Ester for Radioiodination of Antibodies. *J. Labelled Compds Radpharm. 37*, 557-559.
22. Wilbur D.S., Hamlin D.K., Pathare P.M., Heusser S., Quadros E.V., McLoughlin P. and Morgan A.C. (1995) Radioiodination of Vitamin B_{12}. Synthesis and *nca*-Radioiodination of Cobalamin-Carboxamide Derivatives. *J. Labelled Compds Radpharm. 37*, 625-627.
23. Laramore G.E., Wootton P., Wilbur D.S., Risler R., Phillips M., Buchholz T.A., Livesey J.C. and Griffin T.W. (1996) BNCT as an Adjuvant to Fast Neutron Radiotherapy for Selected Tumor Systems. In *Cancer Neutron Therapy*, Mishima, Ed, pp 777-782, Plenum Press, New York.
24. Laramore G.E., Griffin T.W., Risler R., Wootton P., Stelzer K.J., and Wilbur D.S. (1997) Boron neutron Capture (BNC): A mechanism for enhancing tumor cell kill in fast neutron radiotherapy. Proceedings of the International Conference on Neutrons in Research and Industry. *SPIE 2867*, 23-26.
25. Wilbur D.S., Pathare P.M., Hamlin D.K., Stayton P.S., Klumb L.A., Tan P., To R., Vessella R.L., and Buhler K.R. (1998) Development of Biotin Trimers as Reagents to Increase (Radio)nuclide Localization in Antibody Pretargeting. In *Synthesis and Applications of Isotopically Labeled Compounds 1997*, J.R. Heys and D.G. Melillo, Editors, pp295-298, John Wiley & Sons, Ltd, Chichester, UK.
26. Hamlin D.K., Wilbur D.S., Pathare P.M., Subramaniam D.S., Corcoran M., and Press O.W. (2000) Evaluation of Antibody Biotinylation Reagents For Application to Targeted Radiotherapy. *Isotope Production and Applications in the 21st Century* (N.R. Stevenson, Editor) Proceedings of the Third International Conference on Isotopes, Vancouver, B.C. Sept. 6-10, 1999, pp 353-355, World Scientific Publishing Co., Inc., River Edge, NJ.

27. Wilbur D.S., Hamlin D.K., Pathare P.M., Buhler K.R., and Vessella R.L. (2000) Evaluation Succinylated Streptavidin as the Radionuclide Carrier in Antibody Pretargeting of Prostate Cancer. In *Isotope Production and Applications in the 21st Century*, (N.R. Stevenson, Editor), Proceedings of the Third International Conference on Isotopes, Vancouver, B.C. Sept. 6-10, 1999, pp 167-169, World Scientific Publishing Co., Inc., River Edge, NJ.

Presentations and Published Abstracts:

1. Wilbur D.S. and Moore H.W. (1977) An Investigation of the Mechanism of Ketene Dimerizations. American Chemical Society, Pacific Conference on Spectroscopy and Chemistry, Anaheim, California, October 1977.
2. Moore H.W., Mercer F., Kunert D.M., Albaugh P., and Wilbur D.S. (1979) Cycloadditions of Cyanoketenes. American Chemical Society/Chemical Society of Japan Chemical Congress, Abstracts. Honolulu, Hawaii, April 1979.
3. Wilbur D.S. and O'Brien H.A. Jr.: (1981), A-Ring Brominations of Estradiol. An Investigation of the Product Ratios Obtained. Third International Symposium on Radiopharmaceutical Chemistry. St. Louis, Missouri, June 1980. *J. Labelled Compds. Radiopharm. 18*, 47.
4. O'Brien H.A., Grant P.M., Bentley G.E., Barnes J.W., Wanek P.M., Whipple R.E., and Wilbur D.S. (1980) The Development of Medically Useful Radionuclides at the Los Alamos Scientific Laboratory. Third Regional Meeting of the Latin American Association of Societies of Nuclear Medicine and Biology. Mexico City, October 1980.
5. Wilbur D.S. (1981) A Review of Bromine-77 Labeled Estradiol Derivatives. Rocky Mountain Nuclear Medicine Conference. Denver, Colorado, May 1981.
6. Wilbur D.S., Anderson K.W., and O'Brien H.A. Jr. (1982) Radiobrominations Utilizing N-Chlorosuccinimide and No-Carrier-Added Sodium Bromide-77. Society of Nuclear Medicine-28th Annual Meeting. Las Vegas, Nevada, March 1982.
7. Wilbur D.S. and Moore H.W. (1982) Schmidt Reactions of 1,4-Benzoquinones and 1,4-Benzoquinone-4-methoximes. American Chemical Society/183rd Meeting. Las Vegas, Nevada, March 1982.
8. Wilbur D.S., Rogers R.S., O'Brien H.A. Jr., Anderson K.W., Stone W.E., Svitra Z.V., and Wanek P.M. (1982) Radiohalogen Labeling Studies Using Radio-HPLC for Purification and Identification. International Symposium on the Synthesis and Applications of Isotopically Labeled Compounds. Kansas City, Missouri, June 1982.
9. Wilbur D.S., Anderson K.W., Stone W.E., and O'Brien H.A. Jr. (1982), Aromatic Radiobrominations Using Aryltrimethylsilyl Derivatives. Society of Nuclear Medicine/29th Annual Meeting. Miami Beach, Florida, June 1982. *J. Nucl. Med. 23,* P106 (Abstract).
10. Hylarides M.D., Mettler F.A., and Wilbur D.S. (1982), Studies Toward B-Ring Radiobrominations of Estrogens. Society of Nuclear Medicine/29th Annual Meeting, Miami Beach, Florida, June 1982. *J. Nucl. Med. 23,* P104 (Abstract).
11. O'Brien H.A. Jr., Barnes J.W., Bentley G.E., Wilbur D.S., Thomas K.E., Steinkruger F.J., Wanek P.M., Svitra Z.V., and Rogers R.S. (1982) Recent Developments in Radioisotope Production and Separations, and Pharmaceutical Labeling at Los Alamos. 3rd World Congress of Nuclear Medicine and Biology. Paris, France, August 1982.
12. Wilbur D.S. (1983) Radiobrominations. An Overview of the Problems Encountered Using High Specific Activity. American Chemical Society/185th National Meeting. Seattle, Washington, March 1983.
13. Wilbur D.S. and Svitra Z.V. (1983) Radiohalogenations of Aryl and Alkyl Groups via Organopentafluorosilicates. American Chemical Society/185th National Meeting. Seattle, Washington, March 1983.
14. Wilbur D.S., Svitra Z.V., and Rogers R.S. (1983) New Labeling Methods for ^{123}I and other radiohalogens. Rocky Mountain Nuclear Medicine Conference. Denver, Colorado, April 1983.
15. Wilbur D.S., Svitra Z.V., and O'Brien H.A. Jr. (1983) Applications of Aryltrimethylsilanes in Radiobrominations. 30th Annual Society of Nuclear Medicine Meeting. St. Louis, Missouri, June 1983. *J. Nucl. Med. 24*, P43 (Abstract).

16. Wilbur D.S. and Thomas K.E. (1984) New Radionuclides with Potential for Use in Nuclear Medicine. Rocky Mountain Nuclear Medicine Conference. Park City, Utah, March 1984.
17. Wilbur D.S. and Svitra Z.V. (1984) Reaction Variants in Scaling Radiobrominations from Stoichiometric Levels to No-Carrier-Added Levels. American Chemical Society/187th National Meeting. St. Louis, Missouri, April 1984.
18. O'Brien H.A. and Wilbur D.S. (1984) A Review of ^{77}Br and ^{123}I Labeling Chemistries. American Chemical Society/187th National Meeting, St. Louis, Missouri, April 1984.
19. Hylarides M.D., Leon A.A., Mettler F.A., and Wilbur D.S.: Synthesis of 1-Bromo-estradiol (1984) Incorporation of Bromine-82 and Bromine-77. American Chemical Society/187th National Meeting, St. Louis, Missouri, April 1984.
20. Svitra Z.V., Wilbur D.S., and Rogers R.S. (1984) Synthesis and Reactions of *p*-Trimethylsilylphenylpropionic Acid. 7th Rocky Mountain Regional Meeting of ACS, Albuquerque, New Mexico, June 1984.
21. Hylarides M.D., Leon A.A., Mettler F.A., and Wilbur D.S. (1984) Studies toward B- and C-Ring Radiohalogenation of Estradiol. 7th Rocky Mountain Regional Meeting of ACS, Albuquerque, New Mexico, June 1984.
22. Wilbur D.S. (1984) Development of No-Carrier-Added Radiopharmaceuticals with the Aid of Radio-HPLC. Radiopharmaceutical Science Council Workshop, Society of Nuclear Medicine 31st Annual Meeting, Los Angeles, California, June 1984.
23. Wilbur D.S. (1984) Syntheses and Radiobrominations of some Trimethylsilyl-phenethylamines. Society of Nuclear Medicine 31st Annual Meeting, Los Angeles, California, June 1984. *J. Nucl. Med. 25*, 124. (Abstract)
24. Speranza M., Shiue C.Y., Wolf A.P., and Wilbur D.S. (1984) Syntheses of [^{18}F] Aryl Fluorides by Fluorination of Aryltrimethylsilanes or Arylpentafluorosilicates with [^{18}F]F_2 or [^{18}F]CH_3CO_2F. Society of Nuclear Medicine 31st Annual Meeting, Los Angeles, California, June 1984. *J. Nucl. Med. 25*, 126. (Abstract)
25. Speranza M., Shiue C.Y., Wolf A.P., Wilbur D.S., and Angelini G. (1984) The synthesis of ^{18}F-Labeled Aryl Fluorides by Electrophilic Fluorination of Aryltrimethylsilanes and Arylpentafluorosilicates. Fifth International Symposium on Radiopharmaceutical Chemistry, Tokyo, Japan, July 1984.
26. Adam M.J., Wilbur D.S., Ruth T.J., and Garcia S.R. (1984) Sources of Carrier Bromine in High Specific Activity Radiobromination Reactions as Determined by Neutron Activation Analyses. Fifth International Symposium on Radiopharmaceutical Chemistry, Tokyo, Japan, July 1984.
27. O'Brien H.A., Grant P.M., Barnes J.W., Bentley G.E., and Wilbur D.S. (1985) Preparation of High Specific Activity Bromine-77. Midwinter Society of Nuclear Medicine Meeting, Radiopharmaceutical Science Council Symposium, Las Vegas, Nevada, January 1985.
28. Wilbur D.S. (1985) Evaluation and Use of Organosilanes for Radiohalogen Reactions. Alberta Heritage Foundation for Medical Research Speaker. University of Alberta, Edmonton, Alberta, September 1985.
29. Fritzberg A.R., Kasina S., Reno J.M., Srinivasan A., Wilbur D.S., Vanderheyden J.L., Schroff R.W., and Morgan A.C. (1986) Radiolabeling of Antibodies with Tc-99m using N_2S_2 Ligands. Society of Nuclear Medicine 33rd Annual Meeting, Washington, D.C., June 1986. *J. Nucl. Med. 27*, 957. (Abstract)
30. Wilbur D.S., Jones D.S., Fritzberg A.R., and Morgan A.C. (1986) Radioiodination of Monoclonal Antibodies. Labeling with *para*-Iodophenyl (PIP) derivatives for *in vivo* Stability of the Radioiodine Label. Society of Nuclear Medicine 33rd Annual Meeting, Washington, D.C., June 1986. *J. Nucl. Med. 27*, 959. (Abstract)
31. Jones D.S., Wilbur D.S., and Fritzberg A.R. (1986) Synthesis of Functionalized Aryl Stannanes: Intermediates for Radioiodinations of Proteins. American Chemical Society Meeting. Anaheim, California, September 1986.
32. Wilbur D.S., Hadley S., Grant L., Seubert J., Morgan A.C. Jr., and Fritzberg A.R. (1987) Evaluation of Radioiodinated Monoclonal Antibody Conjugates Which are Resistant to *In Vivo*

Deiodination. Second International Conference on Monoclonal Antibody Immunoconjugates for Cancer. San Diego, California, March 1987.

33. Fritzberg A.R., Wilbur D.S., Kasina S., Reno J., Srinivasan A., Vanderheyden J.L., and Morgan A.C. (1987) Radiolabeling of Antibodies by Conjugation of Stable, Preformed Groups for Diagnosis and Therapy. American Association of Pharmaceutical Scientists. Atlanta, Georgia, May 1987.
34. Beaumier P.L., Kasina S., Wilbur D.S., Reno J.M., Srinivasan A., Fritzberg A.R., and Morgan A.C. (1987) Preclinical Evaluation of Tc-99m Labeled Monoclonal Anti-Melanoma Antibodies and Fragments. Society of Nuclear Medicine 34th Annual Meeting, Toronto, June 1987. *J. Nucl. Med. 28*, 691. (Abstract)
35. Hadley S.W., Grant L.M., and Wilbur D.S. (1987) Evaluation of Radioiodinations and Conjugations of 4-Iodobenzoates for Protein Labeling. Society of Nuclear Medicine 34th Annual Meeting, Toronto, June 1987. *J. Nucl. Med. 28*, 725. (Abstract)
36. Hylarides M., Jones D., Seubert J., Hadley S., and Wilbur D.S. (1987) Synthesis and Radioiodination of Iodophenyl Conjugates for Protein Labeling. Society of Nuclear Medicine 34th Annual Meeting, Toronto, June 1987. *J. Nucl. Med. 28*, 560. (Abstract)
37. Wilbur D.S., Hylarides M.D., Seubert J., and Fritzberg A.R. (1987) Reactions of Organometallic Compounds with Astatine-211. Application to Protein Labeling. Astatine Workshop, Hungarian Academy of Sciences, Budapest, Hungary, Aug. 31-Sept. 1, 1987.
38. Wilbur D.S., Hylarides M.D., Hadley S.W., and Fritzberg A.R.: (1988) Astatine-211 Labeling of Antibodies for Radioimmunotherapy; Incorporation of Astatine-211 into Aromatic Compounds via Organometallics. Third International Conference on Monoclonal Antibody Immunoconjugates for Cancer, San Diego, California, February 1988.
39. Wilbur D.S., Hadley S.W., Hylarides M.D., Beaumier P.A., and Fritzberg A.R. (1988) Comparison of an Iodovinyl Antibody Conjugate Towards *In Vivo* Deiodination. Society of Nuclear Medicine 35th Annual Meeting, San Francisco, California, June 1988. *J. Nucl. Med. 29*, 777. (Abstract)
40. Naruki Y., Carrasquillo J.A., Maloney P.J., Reynolds J.C., Wilbur D.S., Park C.H., Reba R.C., Quadri S.M., Otsuka S., and Larson S.M. (1988) Effect of Radiolabeling Method on Retention of Monoclonal Antibody by Cultured Cells. Society of Nuclear Medicine 35th Annual Meeting, San Francisco, California, June 1988. *J. Nucl. Med. 29*, 901. (Abstract)
41. Wilbur D.S., Hylarides M.D., Hadley S.W., Beaumier P.A., and Fritzberg A.R. (1988), Protein Labeling with Iodine-123 Using a *Para*-Iodophenyl (PIP) Conjugate. Society of Nuclear Medicine 35th Annual Meeting, San Francisco, California, June 1988. *J. Nucl. Med. 29*, 929. (Abstract)
42. Axworthy D.B., Wilbur D.S., Schroff R.W., Hadley S.W., Hylarides M.D., Collins C., Nelp W.B., and Fritzberg A.R. (1988) Identification of the Major Urinary Metabolites of *Para*-Iodobenzoate Conjugates of an Antibody Fragment in Humans: Comparison with Chloramine-T. Society of Nuclear Medicine 35th Annual Meeting, San Francisco, California, June 1988, *J. Nucl. Med. 29*, 1325 (Abstract)
43. Wilbur D.S. (1988) Radiohalogenation of Antibodies Via Conjugation of Labeled Small Molecules. Continuing Education Symposium. Society of Nuclear Medicine 35th Annual Meeting, San Francisco, California, 1988.
44. Hylarides M.D., Wilbur D.S., Hadley S.W., Sanderson J.A., Reed M.W., and Fritzberg A.R. (1989) Investigation of Labeling Monoclonal Antibodies with N-Succinimidyl *Para*-Iodobenzoate (PIP) for Clinical Use. Fourth International Conference on Monoclonal Antibody Immunoconjugates for Cancer. San Diego, California, March 1989.
45. Hadley S.M., Grant L.M., Hylarides M.D., Fritzberg A.R. and Wilbur D.S. (1989) Synthesis, Radioiodination, and Evaluation of a *Para*-Iodobenzyl Alcohol Ester Antibody Conjugate. The Society of Nuclear Medicine 36th Annual Meeting, St. Louis, Missouri, June 1989, *J. Nucl. Med. 30*, 924 (Abstract)
46. Wilbur D.S., Hadley S.W., Beaumier P.L., and Fritzberg A.R. (1989), *In Vivo* Comparison of the *Para* and *Meta* Isomers of Radioiodinated Iodobenzoyl Conjugates of Antibodies. The Society of Nuclear Medicine 36th Annual Meeting, St. Louis, Missouri, June 1989., *J. Nucl. Med. 30*, 932 (Abstract)

47. Hadley S.W., Gray M.A., Atcher R., Hylarides M.D., Fritzberg A.R., and Wilbur D.S. (1989) Preparation and Evaluation of *Para*-[At-211]Astatobenzoate Labeled Antibodies. The Society of Nuclear Medicine 36th Annual Meeting, St. Louis, Missouri, June 1989., *J. Nucl. Med. 30*, 832 (Abstract)
48. Axworthy D.B., Vanderheyden J.L., Wilbur D.S., Hadley S.W., Hylarides M.D., Wahl R.L., Hanelin L., and Fritzberg A.R. (1989) Urinary Metabolites of I-131 and Re-186 Radiolabeled Conjugates of Monoclonal Antibodies and Fragments in Patients. The Society of Nuclear Medicine 36th Annual Meeting, St. Louis, Missouri, June 1989., *J. Nucl. Med. 30*, 793 (Abstract)
49. Wahl R.L., Roberts J., Hopkins M., Drescher C., Fig L., Mallette S., Foisie D., Schroff R., Abrams P., Fer M., and Wilbur D.S. (1989) Phase I Evaluation of I-131 PIP Labeled Anti-Ovarian Carcinoma Antibody. Presented at Radiological Society of North America, Chicago, IL, Nov. 1989. (Abstract)
50. Wilbur D.S. (1990) Potential Use of Alpha Emitters in Treating Cancer. Presented at meeting on; *Current Status and Future Directions in Immunoconjugates, Diagnostic and Therapeutic Approaches.* Orlando, FL, Feb. 1990.
51. Wilbur D.S., Hadley S.W., Gray M.A., and Atcher R.W. (1990) Development of a Rapid, Efficient, and Safe Method for Radiolabeling Monoclonal Antibodies with Astatine-211. Fifth International Conference on Monoclonal Antibody Immunoconjugates for Cancer. San Diego, CA, March 1990.
52. Wilbur D.S., Hylarides M.D. and Hadley S.W. (1990) Radiohalogen Labeling of Monoclonal Antibodies for Application to Cancer Therapy. Presented at Joint 45th Northwest/10th Rocky Mountain Regional Meeting, University of Utah, June 13-15.
53. Wahl R., Roberts J., Hopkins M., Dresschar C., Fig L., Mallette S., Mudgett E., Foisie D., Schroff D., Abrams P., Fer M., and Wilbur D.S. (1990) Phase I Evaluation of I-131 PIP Labeled Antiovarian Carcinoma Antibody. *J. Nucl. Med. 31*, 777 (Abstract)
54. Livesey J., Wootton P., Risler R., Laramore G., Wilbur D.S., and Griffin T. (1990) Boron Neutron Capture Enhancement of Fast Neutron Therapy Beams. Presented at the Colloquium on Neutron Radiation Biology: Recent Advances, Future Directions. Rockville, MD, Nov. 5-7.
55. Stray J.E., Goffe D.K., Wilbur D.S., and Vessella R.L. (1991) Direct Radioiodination of Monoclonal Antibody A6H With I-123: Optimal Imaging of Subcutaneous and Subrenal-capusule Implanted Renal Cell Carcinoma Tumor Xenograft TK-82. Presented at the 1992 Annual Meeting of the American Urological Association. Washington D.C., Dec. 1991.
56. Wilbur D.S., Hamlin D.K., Livesey J.C., Laramore G.E., and Griffin, T.W. (1991) Synthesis of Carborane Containing Nitroimidazole Compounds for Application to BNCT. Proceedings of the 4th International Symposium on *The Synthesis and Applications of Isotopes and Isotopically Labelled Compounds.* Toronto, Canada, Sept. 3-7.
57. Wilbur D.S., Vessella R.L., Stray J.E., Goffe D.K., Blouke K.A., and Atcher R.W. (1992) Evaluation of *Para*-[^{211}At]Astatobenzoyl Labeled Anti-Renal Cell Carcinoma Antibody A6H F(ab')$_2$. *In Vivo* Distribution Comparison with *Para*-[^{125}I]Iodobenzoyl Labeled A6H F(ab')$_2$. Presented at Seventh International Conference on Monoclonal Antibody Immunoconjugates for Cancer. March 5-7, San Diego, CA.
58. Wilbur D.S., Stray J.E., Goffe D.K., Hamlin D.K., and Vessella R.L. (1992) *In vitro* and *in vivo* evaluations of cross-linked antibody Fab' fragments. Preliminary studies for site-specific incorporation of therapeutic agents into F(ab')$_2$ fragments. Proceedings of the Eighty-Third Annual Meeting of the American Association for Cancer Research. San Diego, CA, May 20-23.
59. Wilbur D.S., Stray J.E., Hamlin D.K., Goffe D.K., and Vessella R.L. (1992) Synthesis and Radioiodination of an ETAC Reagent for Cross-Linking Antibody Fab' Fragments. *J. Nucl. Med. 33*, 943 (abstract).
60. Wilbur D.S., Hamlin D.K., Laramore G.E., and Griffin T.W. (1992) Preparation of *Meta*-Carborane Derivatives by Thermal Rearrangement in a Small Scale Laboratory Apparatus. Presented at 5th International Symposium on Neutron Capture Therapy, Columbus, OH, Sept. 13-17, 1992.

61. Wilbur D.S., Hamlin D.K., Laramore G.E., and Griffin T.W. (1992) Synthesis and Evaluation of Amine Reactive Carboranyl Derivatives for Application to Boron-10 Containing Polymers. Presented at 5th International Symposium on Neutron Capture Therapy, Columbus, OH, Sept. 13-17, 1992.
62. Wilbur D.S., Hamlin D.K., Livesey J.C., Laramore G.E., and Griffin T.W. (1992) Preparation of *Meta*-Carboranylpropyl-2-nitroimidazole Derivatives for Application to BNCT. Presented at 5th International Symposium on Neutron Capture Therapy, Columbus, OH, Sept. 13-17, 1992.
63. Livesey J.C., Wiens L.W., Wilbur D.S., Laramore G.E., and Griffin T.W. (1992) Hypoxia-Selective Cellular Toxicity of Carboranyl-Nitroimidazole. Presented at 5th International Symposium on Neutron Capture Therapy, Columbus, OH, Sept. 13-17, 1992.
64. Hylarides M.D., Wilbur D.S., Hadley S.W., Reed M.W., Schroeder J.R., Beaumier P.L., and Axworthy D.B. (1992) A Comparison of Iodophenylmaleimide and Iodophenethylmaleimide as Conjugates of Monoclonal Antibodies. Presented at Third International Symposium on Radiohalogens, Banff, Alberta, Canada. Sept. 20-23, 1992.
65. Srivastava R.R. and Wilbur D.S. (1994) Synthesis of Highly Iodinated *closo*-Carborane Compounds. Presented at 208th American Chemical Society meeting, Washington, D.C., August 21-25.
66. Wilbur D.S., Hamlin D.K., Buhler K.R., Srivastava R.R., Stray J.E. and Vessella R.L. (1994) Synthesis, Radioiodination and *in vivo* Evaluation of Mono-Carbon Carborane Derivatives. Presented at 208th American Chemical Society meeting, Washington, D.C., August 21-25.
67. Laramore G.E., Wootton P., Wilbur D.S., Risler R., Phillips M., Bucholz T.A., Livesey J.C. and Griffin T.W. (1994) BNCT as an Adjunct to Fast Neutron Radiotherapy for Selected Tumor Systems. Presented at the Sixth International Symposium on Neutron Capture Therapy for Cancer, Kobe, Japan, October 31 - November 4.
68. Pathare P.M., Wilbur D.S., Heusser S., Quadros E.V., McLoughlin P. and Morgan A.C. (1995) Synthesis of Vitamin B_{12}-Biotin Conjugates which Vary in Position of Coupling. Presented at 209th National Meeting of the American Chemical Society, Anaheim, California, April 2-6.
69. Wilbur D.S., Hamlin D.K., Buhler K.R., Stray J.E., Daniel J. and Vessella R.L. (1995) Synthesis, Radioiodination, and Biodistribution of Two Acridine Derivatives. Presented at 42nd Annual Meeting of the Society of Nuclear Medicine, Minneapolis, MN, June 12-15. *J. Nucl. Med. 36*, 6P-7P.
70. Wilbur D.S., Weerawarna, S.A., Hamlin, D.K., Stray J.E., Pathare P.M., Buhler K.R., Vessella R.L., Stayton P., Tan P. and Klumb L. (1996) Synthesis and Evaluation of Biotin Dimers and Trimers Designed for Clearance of Biotin Binding Proteins from Blood. Presented at the *Nuclear Oncology; Advances in Diagnostic and Therapeutic Applications* Course. Key Biscayne, FL, February 11-15, 1996.
71. Wilbur D.S., Pathare P.M., Heusser S., Hamlin D.K., Quadros E.V., McLoughlin P., and Morgan A.C. (1996) Synthesis of Cyanocobalamin-Isophthalate Dimers and Evaluation of Their Binding with Transcobalamin II. Presented at 211th National American Chemical Society meeting, New Orleans, LA, March 24-28, 1996.
72. Wilbur D.S., Hamlin D.K., Pathare P.M., Vessella R.L., Stray J.E., Buhler K.R., Daniel J., Stayton P. and Klumb L. (1996) Biotinylated Antibody Fab' Fragment Co-Localization with Recombinant Streptavidin in Tumor Bearing Athymic Mice. Presented at the Society of Nuclear Medicine 43rd Annual Meeting, Denver, CO, June 3-6, 1996. *J. Nucl. Med. 37*, 151P (Abstract).
73. Wilbur D.S., Hamlin D.K., Pathare P.M., Vessella R.L., Buhler K.R., Stray J.E., Stayton P.S., and Klumb L.A. (1996) Evaluation of the Effect of Serum Biotin and a Water Soluble Biotinidase Stabilized, Biotinylation Reagent on the Co-Localization of Fab' and Streptavidin in Tumor Xenografts. Presented at The Sixth Conference on Radioimmunodetection and Radioimmunotherapy of Cancer held in Princeton, N.J., October 10-12, 1996. *Tumor Targeting 2*, 158 (Abstract).
74. Wilbur D.S., Hamlin D.K., Stayton P.S., Klumb L.A., Buhler K.R., Stray J.E., and Vessella R.L. (1996) Comparison of the Biodistribution of Recombinant Streptavidin with Commercially available Streptavidin, and attempted Blocking of Kidney Uptake / Retention. Presented at

The Sixth Conference on Radioimmunodetection and Radioimmunotherapy of Cancer held in Princeton, N.J., October 10-12, 1996. *Tumor Targeting 2*, 186-187 (Abstract).

75. Wilbur D.S., Hamlin D.K., Pathare P.M., Weerawarna S.A., Vessella R.L., Buhler K.R., Stray J.E., Stayton P.S., and Klumb L.A. (1996) Synthesis and Radiolabeling of Water Soluble Biotinidase Resistant Radioiodinated Biotin Derivatives. Presented at The Sixth Conference on Radioimmunodetection and Radioimmunotherapy of Cancer held in Princeton, N.J., October 10-12, 1996. *Tumor Targeting 2*, 185-186 (Abstract).
76. Stayton P.S., Klumb L.A., Chu V., To R., Hamlin D.K., Wilbur D.S., Stray J.E., and Vessella R.L. (1996) Streptavidin and Antibody Engineering for Improved Radioimmunodetection and Therapy. Presented at The Sixth Conference on Radioimmunodetection and Radioimmunotherapy of Cancer held in Princeton, N.J., October 10-12, 1996. *Tumor Targeting 2*, 157-158 (Abstract).
77. Wilbur D.S., Pathare P.M., Hamlin D.K., Weerawarna S.A., Vessella R.L., Stayton P.S., and To R. (1997) Synthesis and Evaluation of Water Solubilized Bifunctional and Trifunctional Bis-Maleimide Protein Cross-Linking Reagents. Presented at 213th American Chemical Society Meeting, San Francisco, CA, April 13-17, 1997.
78. Wilbur D.S., Hamlin D.K., Foulon C.F., Zalutsky M.R., and Pathare P.M. (1997) Investigation of *nido*-Carboranes as Hydrophilic Pendant Groups for Astatination of Biomolecules. Application to an Astatinated Biotin Derivative. Presented at XIIth International Symposium on Radiopharmaceutical Chemistry, Uppsala, Sweden, June 15-19, 1997.
79. Wilbur D.S., Hamlin D.K., Pathare P.M., and Weerawarna S.A. (1997) Investigation of Biotin Dimers and Trimers for Increasing the Quantity of Radioactivity on Cancer Cells in Tumor Pretargeting. *In Vitro* Demonstration of Streptavidin Cross-Linking. Presented at XIIth International Symposium on Radiopharmaceutical Chemistry, Uppsala, Sweden, June 15-19, 1997.
80. Sosabowski J., Zweit J., Coley H., Sosabowski M.H., Wilbur, D.S., Hamlin D.K., Carnochan P., and Judson I. (1997) Preparation and Evaluation of N-Acylated Anthracycline Analogues for Radiolabeling with Iodine-124 and Bromine-76: Potential PET Radiotracers for the In Vivo Assessment of Multidrug Resistance. Presented at XIIth International Symposium on Radiopharmaceutical Chemistry, Uppsala, Sweden, June 15-19, 1997.
81. Wilbur D.S. (1997) Biotinylation of targeting molecules and the effect of soluble biotinidase in mouse serum: Implications for the use of biotinylated targeting molecules in radioimmunotherapy. (Invited) Presented at Lund University, Lund, Sweden, June 23, 1997.
82. Wilbur D.S. (1997) Radiohalogenated Proteins and Peptides: Considerations of labeling methods, specific activity and metabolism. (Invited) Presented at Pharmacia & Upjohn, Lund Research Center, Lund, Sweden, June 23, 1997.
83. Wilbur D.S. (1997) Development of New Biotin Reagents for Radiotherapy of Cancer Using Antibody Pretargeting. (Invited) Presented at University of Oslo, Oslo, Norway, June 24, 1997.
84. Wilbur D.S., Pathare P.M., Hamlin D.K., Stayton P.S., Klumb L.A., Tan P., To R., Vessella R.L. and Buhler K.R. (1997) Development of Biotin Trimers as Reagents to Increase (Radio)Nuclide Localization in Antibody Pretargeting. Presented at the Sixth International Symposium on The Synthesis and Applications of Isotopes and Isotopically Labeled Compounds, Philadelphia, PA, September 14-18, 1997.
85. Wilbur D.S., Hamlin D.K., Buhler K.R., Pathare P.M., Vessella R.L., Stayton P.S., and To R. (1998) Evaluation of Methods to Decrease the Kidney Localization of Streptavidin for improved Antibody Pretargeting. Presented at the 11th Int. Conference on Monoclonal Antibodies for Cancer, to be held in San Diego, March 19-21, 1998.
86. Wilbur D.S., Pathare P.M., and Hamlin D.K. (1998) Amplification in Pretargeting: Synthesis and In Vitro Evaluation of Biotinylated Starburst Dendrimers. Presented at the 45th Annual Meeting of the Society of Nuclear Medicine, Toronto, June 7 - 11, 1998. *J. Nucl. Med. 39*, 228P.
87. Pathare P.M., Hamlin D.K., and Wilbur D.S. (1998) Synthesis and Radioiodination of Cyanocobalamin Monomers/Dimers with Improved Water Solubility. Presented at the 45th

Annual Meeting of the Society of Nuclear Medicine, Toronto, June 7 - 11, 1998. *J. Nucl. Med. 39*, 228P.

88. Wilbur D.S., Hamlin D.K., Tingey J., Bray L., Egorov O., Pathare P.M., Brechbiel M.W., and Sandmaier B.M. (1998) Studies of Labeling Proteins with the Alpha-Emitting Radionuclide Bi-213. Presented at the 45th Annual Meeting of the Society of Nuclear Medicine, Toronto, June 7 - 11, 1998. *J. Nucl. Med. 39*, 91P.
89. Hamlin D.K., Pathare P.M. and Wilbur D.S. (1998) Synthesis of Three Biotin-Dye Conjugates and Evaluation of Their Avidin / Streptavidin Binding. Presented at the Northwest Regional American Chemical Society meeting, Pasco, Washington, June 17-20, 1998.
90. Wilbur D.S. (1998) Radiolabeling and Targeting of Alpha-Emitting Radionuclides for Radiation Therapy. Presented (invited) at the Northwest Regional American Chemical Society meeting, Pasco, Washington, June 17-20, 1998.
91. Wilbur D.S., Pathare P.M., Hamlin D.K., Hyre D. and Stayton P.S. (1998) Biotin-Dye Conjugates as Reagents for Determining Competitive Binding of Biotin Derivatives with Avidin and Streptavidin. Presented at the 216th National American Chemical Society Meeting in Boston, MA, August 23-27, 1998.
92. Wilbur D.S. (1998) Development of Reagents for Application in the Pretargeting Approach to Targeted Radiotherapy. (Invited) Presented at Uppsala University, Uppsala, Sweden, October 22, 1998.
93. Wilbur D.S., Pathare P.M., Hamlin D.K., Vessella R.L., Buhler K.R., Stayton P.S., and Hyre D.E. (1999) Development of Biotin Conjugates for Antibody-Based Targeted Radiotherapy. Presented (invited) at the 217th Annual Spring Meeting of the American Chemical Society in Anaheim, CA, March 21-25, 1999.
94. Wilbur D.S., Hamlin D.K., Pathare P.M., and Kegley B.B. (1999) Synthesis of a Nido-Carborane Derivative for use as a Protein Conjugate for Direct Radioiodination. Presented at the 13th International Symposium on Radiopharmaceutical Chemistry held June 27-July 1, 1999, St. Louis, MO.
95. Wilbur D.S., Hamlin D.K., Pathare P.M., Chyan M.-K., and Frownfelter M.B. (1999) Optimization of Radiolabeled Biotin Derivatives for Use in Antibody Pretargeting of Cancer. Presented at the 13th International Symposium on Radiopharmaceutical Chemistry held June 27-July 1, 1999, St. Louis, MO.
96. Wilbur D.S., Hamlin D.K., Schwartz J.L., Sandmaier B.M., Santos E., Storb R., Fisher D.R., and Brechbiel M.W. (1999) An Initial Investigation of Bi-213 Labeled Anti-CD45 Antibody for Ablation of Hematopoietic Cells in a Canine Model. Presented at the 11th International Symposium on Radiopharmacology held June 24-27, 1999 in St. Louis, MO.
97. Wilbur D.S. (1999) Development of Biotin and Streptavidin Reagents for Targeted Radiotherapy of Cancer. (Invited) University of Missouri Chemistry Department, Columbus, MO, December 2, 1999.
98. Hamblett K.J., Hamlin D., Corcoran M., Stayton P.S., Press O. Wilbur D.S. (1999) Development of antibody fragment conjugates for pretargeting radioimmunotherapy. *Proceedings 10th Anniversary Antibody Engineering Conference* p846, Dec. 6-9.
99. Hamlin D.K., Wilbur D.S., Pathare P.M., Venkataraman D., Corcoran M., and Press O.W. (1999) Evaluation of Antibody Biotinylation Reagents for Application to Targeted Radiotherapy. Presented at the Third International Conference on Isotopes, held in Vancouver, BC, Sept. 6-10, 1999.
100. Wilbur D.S., Hamlin D.K., Pathare P.M., Buhler K.R. and Vessella R.L. (1999) Evaluation of Succinylated Streptavidin as the Radionuclide Carrier in Antibody Pretargeting of Prostate Cancer. Presented at the Third International Conference on Isotopes, held in Vancouver, BC, Sept. 6-10, 1999.
101. Wilbur D.S. (2000) An Overview of the Design of Biotin Reagents for In Vivo Application. (Invited) Presented at The *First International Conference on (Strept)Avidin-Biotin Technologies*, held June 18-21, 2000 in Banff, Alberta, Canada. *Biomolecular Engineering, 16*, 159.

102. Wilbur D.S., Nguyen T.-B., Chyan M.-K., Hamlin D.K., and Kegley B.B. (2000) Biotinylation Reagents that Contain Three or More Biotin Moieties. Presented at The *First International Conference on (Strept)Avidin-Biotin Technologies*, held June 18-21, 2000 in Banff, Alberta, Canada. *Biomolecular Engineering, 16*, 162.
103. Wilbur D.S., Chyan M.-K., Hamlin D.K., and Kegley B.B. (2000) Radiolabeled Biotin Reagents for Application to Targeted Therapy of Cancer. Presented at The *First International Conference on (Strept)Avidin-Biotin Technologies*, held June 18-21, 2000 in Banff, Alberta, Canada. *Biomolecular Engineering, 16*, 162-163.
104. Hyre D.E., Amon L.M., Wilbur D.S., Lybrand T.P., Stenkamp R.E., and Stayton P.S. (2000) Understanding and Altering the Affinity of Streptavidin for Biotin and Derivatives. Presented at The *First International Conference on (Strept)Avidin-Biotin Technologies*, held June 18-21, 2000 in Banff, Alberta, Canada. *Biomolecular Engineering, 16*, 171.
105. Wilbur D.S., Chyan M.-K., Hamlin D.K., Brechbiel M., Nilsson R. and Sandberg B.E.B. (2000) Development of Biotinylation Reagents which Contain Additional Functionality. Presented at The *First International Conference on (Strept)Avidin-Biotin Technologies*, held June 18-21, 2000 in Banff, Alberta, Canada. *Biomolecular Engineering, 16*, 174.
106. Hamblett K.J., Meyer D., Hamlin D., Corcoran M. Stayton P.S., Press O., Wilbur D.S. (2000) Development of antibody conjugates for pretargeting radioimmunotherapy to describe tumor penetration of therapeutic molecules. *Proceedings of Recombinant Antibodies Conference*, June 5-6.
107. Wilbur D.S., Sandmaier B.M., and Storb R. (2000) Evaluation of Antibody-Targeted Bi-213 for Conditioning in Bone Marrow Transplantation. (Invited) Presented at the 4th Annual Meeting of the Society of Nuclear Medicine, June 3-7 in St. Louis, MO.
108. Wilbur D.S., Chyan M.-K., Hamlin D.K., and Brechbiel M.W. (2000) Synthesis and Radiolabeling of a New Biotin-CHX-A'' Derivative for Use with In-111, Y-90, or Bi-213 in Tumor Pretargeting. Presented at the 47th Annual Meeting of the Society of Nuclear Medicine, June 3-7 in St. Louis, MO., *J. Nucl. Med. 41*, 120P.
109. Wilbur D.S., Hamlin D.K., Chyan M.-K., Buhler K.R., Vessella R., and Brechbiel M.W. (2000) Development of Reagents for Delivery of Bi-213 to Metastatic Breast Cancer. Presented at the U.S. Army Medical Research and Materiel Command's 2000 Meeting - DoD Breast Cancer Research Program: Era of Hope, Atlanta, Georgia, June 8-12.
110. Wilbur D.S. (2000) An Overview of Astatine Chemistry and Applications (Invited) Presented at the 4th International Symposium on Radiohalogens, September 9-14, Whistler, B.C.
111. Hamlin, D.K., Kegley B.B., Wilbur D.S., Buhler K. and Vessella R.L. (2000) Radiolabeling and In Vivo Evaluation of Astatinated Succinylated Streptavidin. Presented at the 4th International Symposium on Radiohalogens, September 9-14, Whistler, B.C.
112. Wilbur D.S., Hamlin D.K., Kegley B.B., Pathare P.M., Buhler K.R., and Vessella R.L. (2000) Astatinated Biotin Derivatives for Application to Targeted Radiotherapy. Presented at the 4th International Symposium on Radiohalogens, September 9-14, Whistler, B.C.
113. Wilbur D.S., Hamlin D.K., Liang B. C.-K., Chyan M.-K., Buhler K.R., Vessella R.L. (2000) Investigation of Novel Antibody Conjugates for Use in Pretargeting of Radionuclides to Cancer. (Invited) Presented at Symposium on "Advances in Radiopharmaceutical Chemistry", Pacifichem 2000 meeting, December 14-19, Honolulu, Hawaii.
114. Wilbur D.S., Hamlin D.K., Chyan M.-K., Kegley B.B., Buhler K.R., Vessella R.L., and Brechbiel M.W. (2000) Optimization of Biotin Derivative Structure to Carry Alpha-Emitting Radionuclides in Pretargeting of Cancer. Presented at Symposium on "Radionuclides for Therapeutic Oncology" , Pacifichem 2000 meeting, December 14-19, Honolulu, Hawaii.
115. Sandmaier B.M., Wilbur D.S., Hamlin D.K., Santos E.B., Storb R. (2000) Nonmyeloabative Marrow Transplant Conditioning: Use of Antibody-Targeted Bismuth-213. Presented at 42nd Annual Meeting of the American Society of Hematology, San Francisco, CA, Dec. 1-5.
116. Wilbur D.S., Chyan M.-K., Hamlin D.K., and B.E.B. Sandberg (2001) Synthesis and Evaluation of Protein Biotinylation Reagents that also Contain UV and/or Fluorescence Absorbing Moieties. Presented at the 221st American Chemical Society Meeting, San Diego, CA, April 1-5, 2001.

117. Subbiah K., Meyer D.L., Axworthy D.B., Mallett R.W., Stayton P.S., Hamlin D.K., Wilbur D.S., and Press O.W. (2001) Localization and Imaging of Human B-Cell Lymphoma Xenografts Using Indium-111 Labeled Pretargeted Anti-CD20 Monoclonal Antibody. Proceedings of the 92nd Annual Meeting of the American Association for Cancer Research (abstract #1555), held in New Orlean, LA, March 24-28.
118. Wilbur D.S., Hamlin D.K., Kegley B.B., Chyan M.-K., Pathare P.M., and Wan F. (2001) Studies Which Indicate that Thiourea Bonds Interfere with Radioiodination Reactions. Presented at the 14th International Symposium on Radiopharmaceutical Chemistry held in Interlaken, Switzerland, June 10-15, 2001.
119. Wilbur D.S., Kegley B.B., Hamlin D.K., Chyan M.-K., Quinn J., and Vessella R.L. (2001) Preparation and Evaluation of Radioiodinated Biotin Derivatives which Contain Ionic Charges. Presented at the 14th International Symposium on Radiopharmaceutical Chemistry held in Interlaken, Switzerland, June 10-15, 2001.
120. Wilbur D.S., Chyan M.-K., Hamlin D.K., Brechbiel M., Nilsson R., and Sandberg B.E.B. (2001) Trifunctional Biotinylation Reagents which contain a Radiometal Binding Chelate and an Isothiocyanate Group for Conjugation with Biomolecules. Presented at the 14th International Symposium on Radiopharmaceutical Chemistry held in Interlaken, Switzerland, June 10-15, 2001.
121. Wilbur D.S., Hamlin D.K., Quinn J. and Vessella R.L. (2001) Development of an Improved Biotinylated Clearing Agent for Pretargeting Applications. Presented at the 48th Annual Society of Nuclear Medicine meeting held in Toronto, Ontario, Canada, June 23-27, 2001. *J. Nucl. Med. 42,* 148P.
122. Hamlin D.K., Wilbur D.S., Quinn J. and Vessella R.L. (2001) Evaluation of galactosylated avidin / streptavidin as a blood clearing agent in cancer therapy. Presented at the Northwest Regional meeting of the American Chemical Society, Seattle University, Seattle, WA, June 14-17, 2001.
123. Hamlin D.K., Kegley B.B., Wilbur D.S., Quinn J. and Vessella R.L. (2001) *nido*-Carborane pendent groups for direct labeling of proteins with astatine-211. Presented at the Northwest Regional meeting of the American Chemical Society, Seattle University, Seattle, WA, June 14-17, 2001.
124. Wan F., Kegley B.B., and Wilbur D.S. (2001) Synthesis of Protein Reactive Polybiotin containing Dendrimers. Presented at the Northwest Regional meeting of the American Chemical Society, Seattle University, Seattle, WA, June 14-17, 2001.
125. Kegley B.B., Hamlin D.K., Wilbur D.S., Quinn J. and Vessella R.L. (2001) Synthesis and Radiohalogen Labeling of Biotin Derivatives Containing *nido*-Carboranes. Presented at the Northwest Regional meeting of the American Chemical Society, Seattle University, Seattle, WA, June 14-17, 2001.
126. Wilbur D.S. (2002) Addressing the Issue of Stability in At-211 Labeled Radiopharmaceuticals. Invited Presentation at: Workshop on Radioisotope Therapy with Alpha-Emitters: Present Status and Future Directions. Held at TRIUMF, Vancouver, B.C., April 29.
127. Bethge W.A., Wilbur D.S., Hamlin D.K., Santos E.B., Storb R., and Sandmaier B.M. (2002) Bismuth-213 labeled immunoconjugates in Nonmyeloablative marrow transplantation. Presented at the Workshop on Radioisotope Therapy with Alpha-Emitters: Present Status and Future Directions. Held at TRIUMF, Vancouver, B.C., April 29.
128. Hamlin D.K., Wilbur D.S., Chyan M.-K., Quinn J., and Vessella R.L. (2002) Assessment of the In Vivo Stability of Some Simple Astatinated Aryl- and *nido*-Carboranyl- Compounds. Presented at the 49th Annual Meeting of the Society of Nuclear Medicine, Los Angeles, CA June 15-19; *J. Nucl. Med. 43*, 370P.
129. Wilbur D.S., Hamlin D.K., Chyan M.-K., Quinn J., and Vessella R.L. (2002) Development of Astatinated Biotin Derivatives that are Stable to In Vivo Deastatination. Presented at the 49th Annual Meeting of the Society of Nuclear Medicine, Los Angeles, CA June 15-19; *J. Nucl. Med. 43*, 134P-135P.
130. Wilbur D.S., Hamlin D.K., Smelser H., Quinn J. and Vessella R.L. (2002) Comparison of Tumor Targeting and Pharmacokinetics of 107-1A4 Fab′-Streptavidin and Fab′$_2$-Streptavidin

Conjugates in a Mouse Model. Presented at the 49th Annual Meeting of the Society of Nuclear Medicine, Los Angeles, CA June 15-19. *J. Nucl. Med. 43*, 135P.

131. Wan F., Kegley B.B., and Wilbur D.S. (2002) Synthesis of a biotinylation reagent containing three biotin moieties. Presented at the 224th ACS National Meeting, Boston, MA, Aug. 18-22.
132. Bethge W.A., Wilbur D.S., Hamlin D.K., Santos E.B., Storb R., and Sandmaier B.M. (2002) Bismuth-213 Labeled Anti-CD45 as Conditioning for Nonmyeloablative Marrow Transplantation: A Dose Deescalation Study. Presented at the 44th Annual Society of Hematology to be held in Philadelphia, PA on Dec. 6-10.
133. Wilbur D.S., Hamlin D.K., Foulon C., Zalutsky M.R., Wedge T., and Hawthorne M.F. (2003) Optimizing methods for labeling biomolecules with astatine-211. Presented at Symposium on the Development of High LET Radiopharmaceuticals, American Chemical Society meeting, New Orleans, LA, March 23-27.
134. Bethge W.A., Wilbur D.S., Hamlin D.K., Santos E.B., Brechbiel M.W., Storb R., and Sandmaier B.M. (2003) Radioimmunotherapy with bismuth-213 as Nonmyeloablative conditioning for marrow transplantation. Presented at Symposium on the Development of High LET Radiopharmaceuticals, American Chemical Society meeting, New Orleans, LA, March 23-27.
135. Wilbur D.S. (2003) Romping Through the Mine Field that is Tumor Pretargeting. Presented at the University of Uppsala, Uppsala, Sweden, April 25th.
136. Wilbur D.S. (2003) Approaches to Pretargeting the Alpha-Emitting Radionuclide Astatine-211 to Prostate Cancer. Presented at the University of Lund, Lund, Sweden, April.
137. Wilbur D.S., Sanderson J., Lin Y.K., Quinn J., and Vessella R.L. (2003) Comparison of Kidney Localization of Streptavidin Mutants with Wild Type and Succinylated Recombinant Streptavidin. Presented at the 50th annual meeting of the Society of Nuclear Medicine, New Orleans, LA, June 21-25.
138. Wilbur D.S. (2003) Therapeutic Radiopharmaceuticals-Present and Future Directions. [Invited Presentation] Presented at the 50th annual meeting of the Society of Nuclear Medicine, New Orleans, LA, June 21-25.
139. Wilbur D.S., Hamlin D.K., Chyan M.-K., Quinn J., Vessella R.L., Wedge T., and Hawthorne M.F. (2003) Comparison of the in vivo distributions of an antibody Fab´ labeled by conjugation of N-succinimidyl *para*-[^{211}At]astatobenzoate and by direct ^{211}At labeling using preconjugated *nido*-carboranes, and a *closo*-decaborane. Presented at the 15th International Symposium on Radiopharmaceutical Chemistry, Sydney, Australia, Aug. 10-14.
140. Wilbur D.S., Hamlin D.K., Quinn J., and Vessella R.L. (2003) A Method for Efficient Preparation of an Anti-PSMA Antibody Fab´-Streptavidin Conjugate to be used as a Prostate Cancer Targeting Agent. Presented at the 15th International Symposium on Radiopharmaceutical Chemistry, Sydney, Australia, Aug. 10-14.
141. Wan F., Hamlin D.K. and Wilbur D.S. (2003) Synthesis and In Vitro Evaluation of Biotin Nonamers for Cross-Linking of Multiple Molecules of Radiolabeled Avidin or Streptavidin. Presented at the 15th International Symposium on Radiopharmaceutical Chemistry, Sydney, Australia, Aug. 10-14.
142. Wilbur D.S., Hamlin D.K., Quinn J., and Vessella R.L. (2003) In Vivo Evaluation of an Anti-PSMA Antibody Conjugated with Varying Numbers of Biotin Molecules in a Pretargeting Protocol. Presented at the 12th International Congress on Radiation Research, Brisbane, Australia, August 17-22.
143. Wilbur D.S., Hamlin D.K., Sanderson J.A., Lin Y., Quinn J., and Vessella R.L. (2003) Comparison of Succinylated Recombinant Streptavidin and a Streptavidin Mutant (K134A) as Carriers for Astatine-211 in Pretargeting Protocols. Presented at the 12th International Congress on Radiation Research, Brisbane, Australia, August 17-22.
144. Wilbur D.S. (2003) Targeted High LET Radionuclides for Cancer Therapy. (Invited) Presented at "Progress through Partnership Oncology Forum, University of Washington, Seattle, WA, Oct. 24.
145. Bethge WA, Wilbur D.S., Hamlin D., Santos E.B., Storb R., Sandmaier B.M. (2003) Radioimmunotherapy with Bismuth-213 as Conditioning for Nonmyeloablative Marrow

Transplantation: A Dose De-escalation Study. To be presented at the 45th ASH Annual meeting in San Diego, California, Dec. 6-9.

146. Wilbur D.S., Wan F., Hamlin D.K., and Chyan M.-K. (2004) Synthesis and Evaluation of a Trigalactosyl-Biotin Derivative for Blood Clearance in Pretargeting Protocols. Presented at the 51st Annual Society of Nuclear Medicine meeting to be held in Philadelphia, PA, June 19-23.
147. Wilbur D.S., Hamlin D.K., and Chyan M.-K. (2004) Synthesis and Evaluation of an At-211-Labeled Decaborate [$B_{10}H_{10}^{2-}$] Containing Biotin Derivative. Presented at the 51st Annual Society of Nuclear Medicine meeting to be held in Philadelphia, PA, June 19-23.
148. Wilbur D.S. (2004) Astatinated Molecule Stability In Vivo: The Challenge of Obtaining High Stability Without Affecting the Carrier Molecule. To be presented at the 5th International Symposium on Radiohalogens, Sept. 11-15, Whistler, B.C., Canada
149. Hamlin D.K., Chyan M.-K. and Wilbur D.S. (2004) A Method for Direct Radioiodination of Boron Cage Pendant Groups on Proteins. To be presented at the 5th International Symposium on Radiohalogens, Sept. 11-15, Whistler, B.C., Canada
150. Chyan M.-K., Hamlin D.K. and Wilbur D.S. (2004) A Comparison of the Synthesis and Radiohalogenation of Biotin Derivatives Which Contain a Decaborate(2-) or Dodecaborate(2-) Functional Group. To be presented at the 5th International Symposium on Radiohalogens, Sept. 11-15, Whistler, B.C., Canada